Acute Simple Pneumonitis

# ATYPICAL PNEUMONIA;

## A Review of Thirty Cases

## Together with the Literature.

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# INTRODUCTION.

## Site and Scope of the Present Work.

This Thesis is an account of one type of atypical pneumonia, which I propose to term acute simple pneumonitis, occurring in war-time in a Naval Training Establishment.

The disease has been studied over a period of twenty-one months extending from March 1940 to November 1941. The number of cases here reviewed totals thirty. Whilst the disease occurred in isolated instances throughout this period of nearly two years, the majority of cases were seen, as if in epidemic form, during the late winter and spring of 1941.

This study was made in H.M.S. Ganges, a Naval Training Establishment, having at any one time a personnel of from 1800 to 3500 men. H.M.S. Ganges is situated on the East Coast of England in the county of Suffolk. The Establishment is a naval barracks, the men being housed in a number of stone buildings or Messes. Each Mess houses from 50 to 60 men. The men eat and sleep in their Messes. In other words the trainees are living in confined quarters, where the spread of infection by close contact can readily occur.

During the late winter and spring of 1940, at which time this study was first begun, the Establishment trained only boys. The ages of these boys

varied from 15 to 18. The boy trainees numbered from 2000 to 2200. From the month of May 1940 onwards the trainees were entirely men of military age. The ages of the men varied from 18 to 35, but most of the personnel were young adults. And whereas formerly the Establishment housed on an average 2000 boys, after the change-over from boy to men trainees, the same accommodation was used to house on an average 3000 men. And whereas formerly each Mess housed from 40 to 45 boys, after the advent of conscription each Mess housed 50 to 60 men. In other words since May 1940 there was overcrowding in the Establishment. And it was since May 1940 that the majority of the cases of acute pneumonitis occurred.

General Details of Clinical Opportunities.

H.M.S. Ganges has its own hospital of 180 beds. This Royal Naval Hospital provides for the care of the sick both from the Establishment itself and also from the ships patrolling from the Harwich Base. All the cases here reviewed were seen and treated in this hospital. Whilst most of the cases here described were men from H.M.S. Ganges, a few were from the ships patrolling from the adjacent Naval Base. All the cases were isolated in one ward in the "Zymotic Block" of the hospital, in other words in the part of the hospital set apart for patients suffering from an infectious disease. The ward chosen was that which houses cases of common cold. Indeed,

many of the patients here reviewd were admitted to hospital with an initial diagnosis of common cold. Only with the passage of time was it noted that the initial diagnosis was incorrect. Even once it had been recognised that acute simple pneumonitis existed in more than isolated instances one continued to nurse cases of this disease alongside patients suffering from common cold.

In the investigation of the disease the routine employed was briefly as follows. A radiogram of the chest was obtained at the earliest possible opportunity consistent with good nursing. This was done in order to establish conclusive proof of the existence of an atypical pneumonia. Some of the patients were admitted as walking cases, and a radiogram of the chest was taken before admission to the ward. But in most instances the initial radiogram was taken at a time varying from one to three weeks from the onset of symptoms. A second or even third radiogram was then obtained some time during convalescence, but usually at the end of convalescence, a day or two before discharging the men to duty Unfortunately it was impossible to radiograph the patient more frequently in the early stages of the disease. Owing to Service regulations the portable X-Ray apparatus was removed for most of the time from the hospital. It was thus impossible in the initial stages of the malady to obtain day to day radiographic evidence of the nature of the spread of the disease in the lungs.

But the existence of the disease was proved beyond doubt by the one or more radiograms that were taken in each particular instance.

Besides radiographic investigation, the sputum, if any, was examined. A direct examination was made to determine the nature of the predominant organism. And if circumstances warranted that this should be done, the sputum was specifically examined for the presence of the bacillus of tuberculosis.

In many cases a total and differential leucocyte count was determined in the early stages of the disease.

Remarks upon Importance of the Malady.

The incidence of lobar pneumonia is less frequent nowadays than in former years. The disease, formerly so familiar to us in actual practice as in the standard text-books, is now not seen so often as it was. And it is equally certain that a different type of pulmonary disease is becoming more prevalent not only in this but also in other countries. This disease, apparently of varying severity, has been described under the differing titles of acute pneumonitis, disseminated focal pneumonia, atypical pneumonia, virus pneumonia and atypical broncho-pneumonia.

The more frequent use of radiography in the diagnosis of diseases of the chest has, more than anything else, brought to light the existence of this condition. The symptomatology and physical signs of

the average case here described would rarely lead one to suspect the existence of fairly extensive physical changes in the lungs. Indeed the whole behaviour of the disease is something new. It is very rare for the patient to complain of severe symptoms. There is no severe prostrationin the course of the disease. The usual complaint is of malaise, slight sore throat, perhaps catarrh, a persistent cough sometimes unproductive of sputum, and chill. There may or may not be a history of sweating, there are rarely any aches or pains in the muscles, and the degree of pyrexia is only moderate. The physical signs are also indefinite. The respiratory rate is little increased, if at all. There may be some slight impairment of the percussion note, together with some diminution of breath sounds over one or more portions of the lungs, usually at one of the bases. At these areas the breath sounds are almost always vesicular in character and there are usually accompaniments in the nature of crepitations, perhaps together with a few rhonci. The subsequent course of the disease is usually mild. A low-grade pyrexia rarely persists for more than a few days. Sometimes a slight pain in the chest is complained of and almost always a troublesome cough continues for two or more weeks. But it is often only the knowledge that the disease appears to be occurring in epidemic form that prompts one to obtain a radiogram of the chest. Then the nature of the disease is at once made apparent. In the lung

fields opacities of varying density and extent are seen to correspond with the areas where abnormal physical signs are detected. Without the aid of radiography one might fail to diagnose the true state of affairs. For the patients, in this series at any rate, are healthy young adults usually with no previous or family history of lung disease. Occasionally too the diagnosis is first made with the help of radiography in an ambulant patient with practically no symptomatology beyond a feeling of slight malaise and cough. Here then we are confronted with a disease which, occurring apparently in epidemic form, presents mild symptoms and few physical signs. And it is often only by means of radiography that the true nature of the condition is revealed.

The disease is evidently an infectious one. This means that it is important. It should be borne in mind that it can be spread at any rate by close contact. In the treatment of the condition adequate isolation should be secured in order to prevent its further dissemination. Patients suffering from the illness should preferably be cared for by nurses who are familiar with the methods of control of epidemic disease. Failing this, the nursing attendant should be instructed in the methods of prevention of the spread of the malady. From a study of this particular series of cases it can be seen that a spread of the disease can readily occur where

people are closely herded together in overcrowded quarters.

Further, this malady is of importance because of the very interesting problem of diagnosis.

The possibility of its occurrence should be remembered during epidemics of common cold and influenza. For, as we have seen, the symptoms in the initial stages closely resembles those of simple febrile catarrh. And the symptoms and physical signs are not unlike those of a mild form of influenza complicated by what is so often called simple congestion of the lungs. Indeed, influenza may be complicated by what appears to be in effect one form of pneumonitis. Acute simple pneumonitis likewise enters into the differential diagnosis of the more serious pulmonary diseases such as lobar pneumonia, so-called unresolved pneumonia, broncho-pneumonia, collapse and infarct of the lung, lung abscess, bronchiectasis, and pulmonary tuberculosis.

The cause or causes of acute simple pneumonitis have yet to be discovered. Until we know the causative factor treatment must necessarily be unsatisfactory. Present-day opinion inclines to the view that one form of the disease at least can be caused by virus infection. It would be of immense value if the virus concerned could be identified, since this would at once raise the possibility of securing treatment by specific means.

Finally it is apparent that today the existing nomenclature of diseases of the lungs is incomplete and unsatisfactory. The classical picture of lobar pneumonia is less familiar to us. The distinction between the true lobar and the lobular types of pulmonary disease is ill-defined. And the incidence of so-called atypical pneumonia is evidently increasing. Various classifications have been and are being propounded, but until the various disease entities have been identified according to aetiology, morbid anatomy and clinical manifestations the subject must yet remain controversial.

II.

General Description as given in the Literature.

Reports of a disease identical with the condition here described in this Thesis appear in the literature of the last few years. Isolated instances of "atypical or symptom-poor pneumonia" are recorded by Kellner (1931, 1932, 1933), Leitner(1932), Löffler (1932, Ameuille and Lejard (1932), Sayago (1934), Davidson (1935), and Kluit (1936). Allen (1936) records the admission to a military hospital during the year 1935 of 68 cases of what he terms acute pneumonitis. In this country Gill (1937) gives four case records of "simple pneumonitis" occurring in childhood. Moncrieff (1937) describes the same condition under the same title. Again a year later Gill (1938) reports under the heading of "acute simple pneumonitis" further cases occurring both in childhood and in adult life. Maxwell (1938) gives a summary of 24 cases of what is evidently the same disease under the title of "pneumonitis." Most of the cases of "acute interstitial pneumonitis" described in America by Smiley, Showacre, Lee and Ferris (1939) are exactly similar to the ones reviewed in this Thesis. The same condition is described by Ramsay and Scadding (1939) as occurring in 21 cases having as their essential lesion a transient consolidation of the lung. More recently Murray (1940) reports that the same disease was seen affecting the students of Harvard University. Under

the description of "atypical bronchopneumonia of unknown aetiology" he reviews 132 cases occurring over a period of 4 years.

Clinical Picture:-

What are the characteristics of this disease, which, following the example of Gill, ~~which~~ I propose to term acute simple pneumonitis? It would be most convenient to describe first of all the symptoms and clinical picture. The description which follows is typical of the average case described by the various authors referred to above. The onset is most often insidious. The initial complaints are almost always mild. There is always a feeling of malaise, but never severe prostration. There is fever usually only of mild degree. The pulse rate is increased, but usually not in proportion to the degree of fever. The respiratory rate is rarely increased at the onset and dyspnoea is never unduly prominent. A mild catarrh may or may not be complained of, but there is usually some dryness or soreness of the throat with injection of the fauces and perhaps some post-nasal discharge. Cough is usually present, but it is not as a rule severe and is often/not unproductive of sputum in the early stages. Sputum if present is often only mucoid at first, though it may be blood-stained. It is never the rusty sputum of acute primary lobar pneumonia. In the later stages of the disease the sputum may become mucopurulent in character,

but this is exceptional; more often than not a dry cough persists as the only complaint. The patients do not usually complain of generalised muscle pains though in a few instances this may be so. Pain in the chest is a rare complaint and if it is present it usually amounts to nothing more than a dull ache and is rarely the severe acute pain that one associates with an acute pleurisy. Headache, sweating, and chill are often present at the onset.

When first seen the patient usually requires treatment by confinement to bed. On the other hand the symptoms are often so trivial in an ambulant patient that it is only the radiographic appearances that indicate that the disease is more serious than a simple"cold in the head". And it is probable that several of the milder forms of the disease do not inconvenience the patient sufficiently to cause him to consult his medical attendant. Or the true nature of the disease may easily be overlooked by the physician.

The course of the disease is always benign and never extends beyond a few weeks at the most. Occasionally the temperature reaches a level of 103° or 104° Fahrenheit, but the pyrexia is never prolonged. The patient is usually perfectly comfortable in bed. His chief complaints are sweating and a troublesome cough. Often there are no complaints at all and the patient queries the necessity for confinement to bed. Convalescence is always satisfactory. There are no

serious complications in this group of cases. The disease as described forms a distinct and separate form of atypical pneumonia. There are other forms of atypical pneumonia which pursue a more severe and prolonged course than this. They will be referred to later in the discussion of the differential diagnosis, but they do not concern us here.

The physical signs are conspicuous by their paucity. In the initial stages there is very little to be detected on examination. The reddening of the fauces has already been referred to. There may or may not be some impairment of percussion note, and diminution of breath sounds at the site of the lesion. This is often surprising in view of the extent of the disease as seen in a radiogram taken at this time. Moreover there are rarely any accompaniments to be heard when the first examination is made. Later, and especially during convalescence, crepitations and possibly rhonci are to be heard. These added sounds may persist for some weeks, together with a cough now productive of some sputum. But the breath sounds are almost always vesicular in character. Comparatively few cases have been reported where broncho-vesicular or true bronchial breathing has been noted.

Radiographic examination of the cases shows resolution taking place within about two weeks of the onset of symptoms and complete resolution usually not later than the sixth week of the disease.

Most authors report a normal or only slight increased leucocyte count during the course of the disease. The erythrocyte sedimentation rate is generally raised.

A clinical picture similar to the above is presented by the cases seen in childhood, as reported by Gill (1937 and 1938).

The literature records very few complications. Allen (1936) reports the occurrence of acute maxillary sinusitis, acute otitis media, urticaria and peritonsillar abscess. Maxwell (1938) mentions dry pleurisy and pleural effusion. He also describes cases complicated by empyema, true pneumonia and heart failure. Smiley et alia (1939) report cases complicated by mild pleurisy. In several of the cases they also note loss of weight, often of as much as 16 to 18 pounds. Murray (1940) records only one instance of pleurisy with effusion and even that was not confirmed by exploratory puncture. Eight of his 132 cases were complicated either by follicular tonsillitis, acute sinusitis or otitis media on admission to hospital. Urticaria occurred in one case, ulcerations of the soft palate in another, and streptococcal pharyngitis in a third.

The prognosis is always good. No deaths have been recorded and complications, as we have seen, are few and never serious. Allen (1936) reports an average duration of stay in hospital of 28 days, with a minimum of 9 days. The duration of the disease

in Maxwell's experience (1938) varied from one to six weeks, with an average of just over two weeks. Of Ramsay and Scadding's twenty-one cases (1939) eight did not leave their usual occupation, six more were not confined to bed at all, and the remainder were not confined to bed for more than nine days at the most.

Since recovery is the absolute rule, there is little to report concerning the treatment of the condition. This is largely symptomatic. The patient is confined to bed. The nursing required is as for the care of ordinary acute infectious diseases. A low diet is recommended in the early stages, followed by a full normal diet once the temperature has returned to normal levels.

Some authors advise a relatively high carbohydrate diet. An abundant fluid intake is advocated by all. For the control of troublesome cough codeine appears to have been most commonly used. Salicylates have been given to combat the muscular pains in the early stages. It is significant that the course of the disease is entirely unaltered by the emploment of chemotherapy. As yet there is no specific treatment for the condition. To replace the salt loss caused through perspiration, when this is severe, the daily intake of sodium chloride has been advocated.

Epidemiology and Aetiology.

It is difficult to judge of the true age and

sex incidence of the disease, since hitherto reports have been comparatively few. There appears however to be no selective age or sex incidence. There is evidently no occupational factor operative in the aetiology. With regard to the seasonal incidence, most of the cases of Ramsay and Scadding's series (1939) were seen in the months of February, March and April. None of them occurred in the last three months of the year. Smiley et alia (1939) found that the seasonal incidence of their group did not coincide with that of acute pneumococcal pneumonia. Murray (1940) notes that the highest incidence of his cases occurred in November and December, whereas the highest incidence of other respiratory diseases is in February and March. The seasonal incidence of acute simple pneumonitis thus appears to bear no relationship to that of the more common respiratory infections and to that of lobar pneumonia in particular. The previous health of cases suffering from the disease does not reveal any special predisposition to pulmonary disease. Indeed, on reading through the case histories reported in the literature one is impressed by the occurrence of acute simple pneumonitis in large numbers of otherwise perfectly healthy children, adolescents and adults. The immediate past history too is in most instances free from illness.

Acute simple pneumonitis is evidently an infectious disease, having for instance a greater

greater infectivity than lobar pneumonia, and yet it does not attack large numbers of people as in the case of epidemic influenza. Spread of the disease is apparently by close contact. The aetiology of the condition is unknown, but most writers on the subject think that the causative agent is almost certainly a filterable virus, and that invasion by secondary organisms is often superimposed. Thus Allen (1936) found cases occurring at the same time as other respiratory diseases such as lobar pneumonia and primary broncho-pneumonia. Admitted to the Fort Sam Houston hospital during the year 1935 there were 68 cases of acute pneumonitis amongst a total of 2081 cases of respiratory disease. In his investigation of acute pneumonitis Allen did not deem it necessary to examine the sputum of all cases for pneumococcus typing. Group IV. pneumococci were found in a few instances, but in others no pneumococci were present at all.

Gill (1938) concludes that acute simple pneumonitis is certainly not another form of pulmonary tuberculosis. The acute onset of the disease, the benign course and the rapid resolution are all in favour of its being of a simple nature. In several of his cases, too, the Mantoux reaction was negative.

Maxwell, (1938) regarded the whole condition as being so mild that he rarely examined the sputum in detail.

Smiley et alia (1939) mention how that in several instances their cases came from the same house at Cornell University. In the case of contacts the onset of the disease occurred some 5 to 14 days after the initial case had been admitted to hospital. But they conclude that infectivity is only slight in the absence of cough. Regarding the disease as more infectious than lobar pneumonia their custom is to enforce strict isolation upon all their patients. Examination of the sputum in their series shewed no specific organismal infection. Most commonly present was a mixed streptococcus viridans and staphylococcus aureus infection. In other instances pneumonia, often of the higher type, predominated. Smiley et alia therefore conclude that the probable causative agent is a filterable virus.

Ramsay and Scadding (1939) regard the use of the term "pneumonitis" unjustified for this condition. They are not convinced that the disease is caused by a specific virus infection. They think the underlying pathological process is in the nature of lobular collapse of the lung, and that the whole condition is nothing more than an aspiration pneumonia arising from an upper respiratory tract infection. They conjecture that the condition occurs very frequently. Instead of the term pneumonitis they prefer to describe the condition as "benign circumscribed pneumonia."

Murray (1940) looks upon the condition as a separate disease entity, unrelated to the common cold

and to epidemic influenza. His own observations suggest that it is contagious, with an incubation period of 7-11 days. Bacteriological investigations in his group of cases led him to conclude that the disease was not caused by any of the known bacteria. He thinks that this is probably a virus disease but admits that so far no positive proof has been obtained to suggest this contention.

Pathology:-

Unfortunately up to date there have been no opportunities for direct observation of the morbid anatomy. Bowen (1935) describes the appearances of two lungs examined by him out of a series of cases of "acute influenza pneumonitis". His cases as reported are similar to those referred to above, but unfortunately no clinical records are given of the two cases examined at autopsy. He describes the "small areas of pneumonitis"as being uniformly firm to palpation. On section these areas were "moist with serous and haemorrhagic exudate". Microscopic examination showed that there was "some cellular infiltration of the smallest bronchioles and of the alveolar walls." Some alveoli were filled with red cells, some with serum and some with mononuclear and epithelial cells. Nowhere were polymorphonuclear cells numerous. He described the findings as those of "an early exudative inflammatory process."

In the absence of pathological material

~~material~~ opinions as to the nature of the morbid processes involved can only be conjectural. But the clinical behaviour and the radiographic appearances of the disease are of some help. Allen (1936) conjectures that the lesion is "an inflammatory and exudative process extending from the bronchioles into the alveoli over a localised portion of a lobe or lobes." In ninety-two per cent of his cases the disease was situated in one or both lower lobes, with a greater incidence in the right lower lobe.

In describing the radiographic appearances of "acute influenza pneumonitis" Bowen (1935) writes thus: "Influenza pneumonitis involves only a portion of a lobe, usual basal, though it has been seen in the upper lobes and involving more than one lobe without increase in symptoms. It extends outwards from the hilus well into the parenchyma, occasionally reaching the periphery. The roentgen appearance is that of a confluent mottled fan or rounded area, usually of homogeneous moderate density in the central portion, with the borders fading into the normal lung. It has the appearance of an exudate alveolar infiltration and is usually more localized and of more even density than the broncho-pneumonias of childhood or than those which complicate adult diseases. The usual picture of broncho-pneumonia is a scattered mottling not confined to one lobe or sharply localized."

Maxwell (1938) looks upon the disease as a mild or abortive form of acute primary pneumonia, the benign course of the disease being determined by a good resistance, both local and general.

Some of these cases have been regarded as examples of an unresolved pneumonia. Yet there is nothing in the past history, immediate or remote, to support this view. The onset of the illness is short, the course is benign, and the whole condition usually terminates within a week or two of the onset. Gill (1937) regards the disease as "a low-grade inflammatory process, chiefly affecting the pulmonary alveoli". At the same time he admits (Gill, 1938) that the same clinical and radiological picture could be produced by areas of lobular collapse caused by the obstruction of bronchioles by aspirated mucus. Such areas could then become the seat of a secondary inflammatory reaction. The fact that the sputum of these cases is often blood-stained supports the theory that the site of inflammation is either in the bronchioles or within the alveoli and not in the interalveolar tissues.

Smiley et alia (1939) divide their cases into three groups according to the radiographic appearances. They believe the disease is primarily an inflammation of the interstitial tissues. In some of their cases involvement of the pleura is recorded. Only the first two groups of their cases

correspond to the disease under discussion here.

As already stated, Ramsay and Scadding (1939) consider that the underlying morbid change in the lung is a transient consolidation. The opacities in their radiograms were usually of a medium homogeneous density, though sometimes a coarse mottling was seen. The outline of the opacities was not regular, but the edges faded off into normal lung tissue. In most of their cases the site of the disease was in the bases of the lungs. Discussing the nature of the lesion they exclude the possibility of its being one form of tuberculosis. For one thing the course of the disease is too short. They point out that they have never encountered or seen recorded a case of proved tubercular infiltration of the lungs which has healed completely in less than six months. Moreover the fact that the lesion is chiefly seen at the base of the lung, the fact that catarrhal symptoms are often present and the fact that tubercle bacilli have never been found in the sputum are sufficient evidence to prove that the disease is not merely another form of pulmonary tuberculosis. Ramsay and Scadding are of the opinion that the opacities seen in the radiograms represent a true inflammatory consolidation of the lung. They stress their association with an upper respiratory catarrh. They assert that in their distribution the shadows are not necessarily related

to the normal lung markings, nor to any one area of the normal lung pattern. They do not think that the radiographic appearances are caused solely by lobular atelectasis; for one thing the shape of the lesion is usually rounded, and secondly there is no mediastinal shift even in the cases of largest involvement. Again, the shadow resembles that of cases of known consolidation. The authors proceed to describe the mechanism whereby pneumonia may result from the aspiration of an excess of mucus during the course of an upper respiratory catarrh. Such a pneumonia need not depend upon the presence of any specific bacterial invader. They point out that such an aspiration pneumonia can be a true lobar pneumonia either by confluence of lobular disease or the result of a massive lobar collapse. They regard these cases as instances of aspiration pneumonia. In favour of their hypothesis they lay stress upon the association of the condition with a catarrh of the upper respiratory tract, and upon the absence of the organisms usually found in the more common specific pneumonias. These two writers however do agree with Maxwell that some of these cases could quite likely be forms of an abortive primary pneumonia occurring in association with a catarrhal infection.

Beaumont, quoted by Gill (1938), likewise states that "the syndrome could be produced by partial obstruction of one or more bronchioles by a mucopurulent inflammatory exudate".

Murray's description (1940) of the radiographic findings in his group of cases corresponds very closely with that of Ramsay and Scadding.

Maxwell (1938) reports a normal or slightly elevated leucocyte count of the blood in the average case, with polymorphonuclear cells predominating.

References to the disease in standard text-books.

Finally, in describing this condition of acute simple pneumonitis, a word must be said about descriptions of the disease in standard text-books of medicine. It can be said at once that these hardly exist at all. I have been unable to find more than two. Beaumont (1937) gives a short description of various forms of pneumonitis in his text-book. These will be referred to later when the subject of the differential diagnosis is ddiscussed. He summarises in particular the clinical findings in the acute pneumonitis of childhood as described by A. Morton Gill.

Davidson (1941) defends the use of the term pneumonitis in his "Practical Manual of Diseases of the Chest". Morton Gill's classification of pneumonitis is referred to, and Davidson approves of his employment of the word in helping to sort out the various varieties of inflammation of the lung that have hitherto been referred to under the generic heading of pneumonia. The author approves the use of the term especially to describe the large group of local inflammations of the lung. He insists that

the expression "pneumonia" is obviously unsuitable for these, since it is better restricted to the specific forms of the disease with which we are all familiar. To him the expression pneumonitis conveys meaning more in a pathological than in a clinical sense.

III.

## Clinical Records.

The records of thirty cases of acute simple pneumonitis are here set out. Twenty two of the thirty patients were from H.M.S. Ganges, the Training Establishment. Of the remainder, one was from a submarine, one from a fleet minesweeper, one from the naval base, two from trawlers, and three from destroyers. The cases were observed over a period of twenty-one months extending from March 1940 to November 1941.

Age. The ages of the patients varied from 15 to 54 years, with 25.8 years as the average age. Most of the patients, eighteen in all, were in the third decade of life. There were eight patients below the age of 20 years and two over the age of 50 years.

Sex. All the patients were male, this survey being entirely upon men drawn from the Navy,

Social Status. Both officer patients and ratings are included in this series. All of the patients were from that body of men classed as being physically fit for military service. By far the majority were volunteers or conscripts for service in the Navy during wartime, rather than active service men. The men were thus drawn from all classes of society.

Broad Aetiological Factors. In by far the majority of cases the onset of the disease was in the late winter and spring of the year. Thus, twenty-one out of the total of thirty cases were admitted to hospital in the months of February, March, April and May. There were only two cases admitted in January and two in December, whilst there was only one in each of the months June and August. There were no cases in the months of July and September.

The incidence of the condition in this naval community leads one to believe that this must be an infectious disease. Over the same period of twenty-one months outbreaks of common cold was frequent in the Establishment. The number of admissions to this hospital of cases of common cold far exceeded the total number of cases of acute simple pneumonitis. On the other hand over the same period there was no epidemic of influenza. And the number of cases of primary lobar pneumonia admitted to hospital during the same period totalled only four, and all of these four cases were mild. Thus the disease under review is less infectious than the common cold or epidemic influenza, but is apparently more infectious than lobar pneumonia, and that at a season of the year when the incidence of lobar pneumonia is normally at its highest.

The occurrence of the disease in numbers in a community such as these barracks leads one to deduce

that the illness is spread by close contact. Most of these patients had been living in overcrowded quarters, either in the barracks Messes or in ships. No two cases came from the same Mess in the Training Establishment. But all the men in their period of training were in close contact with one another, in their Messes, classrooms, swimming bath, gymnasium and so on. Overcrowding would therefore appear to be a factor, favouring the spread of the disease by contagion.

In most instances the illness did not appear to be sufficiently serious to call for a direct examination of the sputum to be made, but it was made in twelve cases. In four of these twelve cases K. pneumococci were the predominating organisms present. In two others streptococci, and in another staphylococci, predominated. The other examinations showed a mixed group of organisms such as Friedlander's bacilli, H. influenzae, staphylococci, tetracocci and micrococcus catarrhalis together with pneumococci or streptococci. Where pneumococci were found in the sputum, typing of the pneumococcus was not performed. For in no case did the illness resemble acute lobar pneumonia.

Whilst the pneumococcus was perhaps the organism most frequently found, the clinical picture

did not suggest that the illness was an abortive form of pneumococcal pneumonia. The onset of the disease was less acute and fraught with less discomfort than is seen in the more serious illness. The course of the disease was much more benign and the end result was always favourable. Fever was not continued as in acute primary pneumonia; in most cases it was low-grade or intermittent, and in one case (No. 9) fever was absent altogether. The respiratory rate in all cases was much slower than that associated with lobar pneumonia, or the rate was not increased at all above the normal. The sputum was not characteristic of lobar pneumonia, being mucoid or muco-purulent in most instances, or even absent altogether. Sputum was "rusty" in only one instance (No. 6), though it was blood-stained in four others. (Nos. 3, 16, 19 and 30). Moreover pneumococci were not found in every case where the sputum was examined. In no case was the patient prostrated by the disease. Leucocytosis, where present, was very slight, and the percentage increase in polymorphonuclear cells was small. As seen by radiography, the appearance of the disease in the lungs was not that of the more severe illness; the opacities in the lungs were less dense and not strictly lobar in distribution. Lastly, there was no response to chemotherapy

where this was used in treatment..

Nor was the disease suggestive of a mild form of pulmonary tuberculosis. The course of the illness was much too short for this. In almost every case where sputum was produced repeated examinations were made for the presence of Bacillus tuberculosis. In no case was the tubercle bacillus found. Only one patient (NO. 6) gave a family history of pulmonary tuberculosis. There was however a predisposition to pulmonary disease in a proportion of the cases. Six of the thirty patients gave a history of antecedent respiratory disease such as pneumonia, pleurisy or bronchitis. Three patients in all gave a history of respiratory disease in the family.

There was nothing in this group of cases to suggest that acute simple pneumonitis is an allergic disorder. Only one patient (No. 3) gave a history of allergic disease, namely hay fever. There was a history of hay fever in the family history of one other (No. 27). Eosinophilia of the blood was not a feature of this illness; the highest percentage of eosinophils recorded was 15 per cent (No. 26), and the next highest figure was 6 per cent.

It has been suggested that the condition under review is merely one form of aspiration pneumonia

occurring in association with, and dependent upon, an upper respiratoy catarrh. One half of the patients of the group complained of symptoms of a mild catarrh of the upper respiratory tract during the course of their illness. In most instances the onset of the disease was accompanied by either coryza or a mild sore throat. Pharyngitis was present in six cases, coryza in eight, laryngitis in one. In one or two cases the pharyngitis was accompanied by a visible post-nasal catarrh. But in no case was the catarrh or coryza severe. It was certainly never severe enough to allow of the aspiration into the lungs of mucus in any considerable quantity. The auscultatory signs in the majority of cases did not suggest a severe catarrh of the upper respiratory passages. Had the patients been aspirating mucus in quantities sufficient to give rise to the extensive disease as seen in the radiograms, one might have expected to find on auscultation numerous accompaniments in one or both lungs. Instead of which accompaniments were rarely numerous. In most instances the added sounds were crepitations in one localised zone of the chest. Numerous bilateral rhonci were present in one case only.

The spontaneous onset and short duration of the disease, as seen in this group of cases, denote an illness of an acute type. Freedom from any severe complications denotes that the disease was simple in nature. There were no instance of the chronic form of pneumonitis such as has been described by Meakins (1936), Beaument (1937), Gill (1938), and others. But the illness was seen in association with a second disease on five occasions. It occurred once in association with rubella (No. 25), the pneumonitis being secondary to the rubella. In No. 16 acute polioencephalitis developed during the course of an acute simple pneumonitis. This is especially interesting in view of the reported association between encephalitis and a severer form of pneumonitis (Scadding (1937) and Reimann (1938)). Pneumonitis was seen in association with a mild attack of catarrhal jaundice in another instance (No. 13). It was seen occurring during the course of acute rheumatism in No. 1. In this group of cases, therefore, acute simple pneumonitis is seen both as an independent malady and also in association with some other disease.

Suspected direct cause. No definite statement can be made as to the direct cause of this disease. The disease was seen occurring together with cases of common cold. It was certainly not the same disease as influenza and there was no influenza epidemic at the time these cases were being admitted to hospital. Most of the patients suffered from the disease at a time of the year when lobar pneumonia is most prevalent. But the clinical behaviour of the disease in no wise resembled acute primary pneumonia. The disease was in fact an entirely separate entity.

The organisms isolated in the sputum were never considered as being other than secondary invaders. They varied in different cases and were only the ordinary invaders of the upper respiratory tract. One can only conjecture that some other invader was the immediate cause of the disease. The most likely cause would be a filtrable virus. The clinical behaviour of the disease at least lends support to this view. And recent experimental work, as will be seen later, lends favour to this hypothesis. One of the characteristics of a virus disease is that it is often highly infectious and spreads with great rapidity. This cannot be said to have been the case here. But it was evident that the infection was contagious, though not highly so, and was propagated by direct casual contact. A virus disease may have a prolonged incubation period. No two cases of this series came

from the same Mess. Two men (Nos. 20 and 22) came from the same ship over a period extending from February to May 1941, but no deduction could be made as to the probable incubation period from these two instances. There must however have been several intermediate contacts in all cases, suggesting that the incubation period was fairly prolonged.

Mode of Onset. The onset of the disease was in most instances acute. That is to say the disease process was established within a few days of the onset of symptoms. Sometimes indeed the disease was well established in the lungs before symptoms were manifest in the patient. The onset was sudden in two cases (No. 2 and 11), being ushered in with sore throat in one and pleuritic pain in the other. In three other instances (Nos. 3, 5 and 10) the onset was relatively slow. It was insidious in one case (No. 1), the pneumonitis occurring without symptoms or signs during the course of an attack of acute rheumatism.

The symptoms at onset were variable. In ten cases they were mainly catarrhal in nature. with headache, coryza, shivering, mild sore throat and cough as the chief features. In five instances the onset was marked with pain in the chest as the predominant symptom. In three more cases the onset of the disease was with catarrhal symptoms and pain in the chest together. The illness began in two men

with dry cough followed by a sharp pain in the chest suggestive of the onset of acute pleurisy. Cough with expectoration was the main initial complaint in three, and sore throat in two. Myalgias or muscle pains were the chief complaint at the beginning of the illness with two cases. In two others the main complaint was of general malaise. As already mentioned, the onset was without symptoms or signs during the course of acute rheumatism in one case. Some of all these symptoms were complained of as a rule. Malaise and sweating were common. Anorexia, epistaxis, vomiting, hoarseness or lumbar pain were other symptoms.

Usually there was slight fever at the outset. On the other hand in six patients the temperature was normal at the time of admission. The highest temperature recorded was 104.2° Fahrenheit. As a rule the temperature was in the neighbourhood of 99°-100° at the outset, and fever was never long continued. The pulse rate too was rarely much increased above the normal rate. Indeed, in proportion to the degree of pyrexia the pulse rate was slow in all cases. This was a marked feature of the disease. It was regarded as indicating the mildness of the condition. Likewise the lack of dyspnoea was looked upon as a favourable sign. On admission to hospital only eleven of the thirty-three patients showed an increase in the respiratory rate, and in most of the

eleven the increase was not marked. Only two cases recorded a respiratory rate above 30 per minute. Dyspnoea was not a feature of the disease. Tachypnoea was very rarely seen, and then only in association with acute pleurisy.

The mild degree of fever, the relatively slow pulse rate, the lack of dyspnoea and the absence of prostration were all signs that this was a mild or simple disease. Indeed these features, seen in conjunction with a radiogram of the chest at the onset of the illness, led one to surmise that the true nature of the condition could easily be overlooked. The onset of the disease could readily be mistaken for the onset of a simple febrile catarrh or common cold. For the physical signs in the lungs were not very distinctive at the onset of the illness. Thus in as many as six cases there were no abnormal signs in the lungs at all at the time of admission to hospital. In the remainder, apart from four cases where a pleural rub was audible at the outset, the signs could readily have been interpreted as indicating nothing more than a mild attack of simple bronchitis. Signs of consolidation of the lung at the onset of the illness were present in not one single instance. Thus unless day to day physical examination of the chest had been made, together with radiographic examination, a wrong diagnosis could readily be arrived at in the initial stages. Moreover with the

passage of time, the persistence of the cough, the weakness, sweating and perhaps loss of weight, together with the later radiographic evidence of consolidation of lung tissue, might suggest a diagnosis of tuberculous infiltration of the lung. Only with the help of radiography at the onset of the disease and the knowledge of the occurrence of the disease in more than sporadic cases could one hope to obtain a true diagnosis in the first week or two of the illness.

Clinical Course. The course of the disease was essentially benign in all cases. The illness was not marked by signs of general systemic disturbance. Examination of the charts recording temperature, pulse and respiration rates will show how mild was the clinical course of the average case. The initial pyrexia was rarely severe. Fever was rarely sustained beyond a few days and was never of any severity. When present the pyrexia was usually of the low-grade intermittent type. In one case the whole course of the illness was apyrexial. There was but little disturbance of the pulse rate. If raised in the early stages of the disease, there was a quick return to the normal level after the first few days. Dyspnoea too was rarely present and never severe. Cyanosis was never seen.

As already stated, catarrhal symptoms were present at the onset in about one half of the group. Some patients complained of chill, but none suffered

from rigors. The subjective sensations were sometimes so insignificant that some of the patients queried the necessity of confinement to bed. There was a notable absence of prostration. To a greater or less degree malaise was present in almost every case. But only six patients complained spontaneously of weakness, and then usually only during convalescence. The malady was not accompanied by the muscle pains and bone aches that occur, for instance, in influenza, although six patients complained of myalgias for a short period. Not one patient complained of loss of weight, and the malady was usually so mild that loss of weight was rarely enquired into. Sweating was a frequent complaint, but it was rarely profuse. There was seldom the profuse sweating that one associates with the course of certain infective diseases. It was rarely as marked as at the time of crisis in acute primary pneumonia.

Most of the patients complained at one time or another of pain in the chest. This was one of the chief symptoms at the onset of the illness in as many as one quarter of the group. With the exception of the seven cases where a pleural friction rub was audible, the pain in the chest was not severe. Some of the patients described it as a dull ache, others as a "bruized feeling", and one as "a feeling of coldness". Cough was a predominant feature of the disease. It was productive of a moderate amount

of sputum in most cases, though sputum was absent throughout the illness in as many as seven. There was no cough at any time during the illness of one patient. Where sputum was produced it was usually mucopurulent in character. In three cases it was mucoid, in four it was blood-stained and in one it was "rusty" as in lobar pneumonia. It was offensive in none. The bacteriology of the sputum has already been discussed. It should be added that elastic fibres were never present in the sputum. The cough was troublesome, even when dry, in a large proportion of the cases. Thus it often kept the patients awake all night and persisted throughout the duration of the illness. In five instances cough was still present at the time of the man's discharge to duty.

At the outset of the disease headache was a frequent complaint. Nausea and vomiting were less frequent. Constipation was sometimes present at the onset or during the course of the disease, but there was never any severe gastro-intestinal upset, and never tympanites or a palpably enlarged spleen such as has been described in the severer forms of pneumonitis. Epistaxis occurred in two cases. Involvement of the nervous system was seen in only one case (No. 16). In this case the patient was admitted to hospital with pneumonitis and during the early stages of his illness he developed what proved to be an acute polioencephalitis.

The nature of the lesion present in the lungs has to be assessed from a consideration of the physical signs and radiographic appearances as well as from the clinical behaviour of the disease. The site of the disease in the lungs was variable, as judged by radiographic and clinical evidence. Thus the disease was situated at the base of the left lung in eight cases, at the base of the right lung in seven, and at both lung bases in five. It was at the base of the right lung and also in the mid zone of the contralateral, or left, lung in three others. The right mid zone alone was affected in three cases, and the left mid zone alone in two. In one case the right, and in one case the left, upper zone was the site of the disease. The physical signs elicited during the course of the disease were suggestive of congestion of the lung rather than of consolidation. Thus out of the total of thirty cases only two exhibited positive auscultatory signs of consolidation, namely dulness on percussion, increased vocal resonance and bronchial breathing. Most cases exhibited crepitations in a localized zone of one or other lung. The crepitations were either fine, medium or coarse in character. Usually they were of the medium and what has been aptly described as the "sticky" variety. Sometimes these accompaniments were audible at both bases. Occasionally rhonci were audible together with the crepitations. In four cases scanty bilat-

eral rhonci, indicative of a mild accompanying generalized bronchitis, were audible in addition to the crepitations in one localized zone. As already stated a pleural friction rub was audible in five cases; in all of these cases the rub soon gave place to crepitations in the area concerned. In three cases there were no abnormal physical signs in the chest at any time during the course of the illness. These physical findings do not suggest consolidation of lung tissue such as occurs in acute primary pneumococcal lobar pneumonia. Rather do they indicate a localized congestion of lung tissue. In most cases the area involved was small. In all cases the disease process was short-lived. The condition was mild and could be described appropriately in lay terms as a "simple congestion." In four cases there were signs indicative of a small pleural effusion at the base of one lung.

The picture most frequently seen on radiography was that of an area of mottling in one or other lung field. The mottled opacities were coarse, medium or fine in character. The area of mottling might extend outwards and downwards from the lung hilum to the diaphragm, or outwards from the hilum into the lung field, maybe as far as to the periphery of the lung. Or the appearance might be that of a uniform opacity varying from a simple lack of translucency to a dense opacity suggesting intense congestion or consolidation.

This shadow likewise usually gave the appearance of commencing in the region of the hilum of the lung and extending outwards therefrom towards the periphery. Neither the opacities nor the mottling were confined to one lobe of a lung. The margins of the affected area were often ill-defined, merging imperceptibly into the surrounding normal lung tissue. Underlying the hazy opacity, or together with the mottled shadows, there was an accentuation of the normal lung markings in the area affected. The whole was more localized than in the case of bronchopneumonia, which usually gives the picture of a scattered mottling not confined to one region. Sometimes these radiographic changes were seen shortly after the onset of symptoms and before the appearance of abnormal physical signs in the chest. With resolution of the disease there was a diminution in the density of the opacities, giving place to a linear accentuation of the normal lung markings. In the advanced state the whole picture suggested an intense congestion together with exudative infiltration.

Occasionally the condition was complicated by an effusion of fluid into the pleural cavity. The pleural effusion was always small in amount and present on the side where mottled opacities were seen in the lung field. The usual radiographic appearance was simply an obliteration of the line of the diaphragm and of the costo-diaphragmatic angle of the

affected side. Such a picture was seen in five cases. In four more cases pleural involvement was indicated by a thickening or simply a delineation of the interlobar septum.

The laboratory findings in this series of cases were not very distinctive. Apart from the findings in the sputum, the blood picture calls for most comment. In eleven cases a total and differential leucocyte count was estimated in the early days of the illness. The average total white cell count was 8.300 cells per cubic millimetre (c. mm.). The highest count was 10.800 cells per c. mm. and the lowest count 6.000 cells per c. mm. The average differential count read something as follows :- neutrophil polymorphonuclear cells 56 per cent., eosinophil polymorphonuclear cells 4 per cent., mononuclear cells 3 per cent., and lymphocytes 36 per cent. The findings therefore differed very little from the typical total and differential count in health. There was certainly no polymorphonuclear leucocytosis such as one finds in acute lobar pneumonia.

With one exception the urine was normal throughout the illness. In one case (No. 6) there was a transient febrile albuminuria in the early stages of the disease. The blood pressure was normal in every case. The erythrocyte sedimentation rate was estimated at the onset of disease in seven cases; it was

slightly raised in five of the seven, the highest recorded reading being 35 millimetres within one hour (Westergren method). In two cases a tuberculin patch test (for both the human and bovine forms) was carried out; the result was negative in both.

The average duration of the disease, as judged by the length of time a man was kept off duty, was six weeks. The longest time spent off duty was three and a half months, but this was in the case where the illness was complicated by acute polioencephalitis. The shortest time spent off duty was five days only. In seven cases the patient was considered fit for discharge to duty whilst still having symptoms such as cough, or residual abnormal physical signs such as the persistence of crepitations in one or more lung areas.

Treatment. The patients were treated by the methods required for the routine nursing of an infectious disease. They were nursed in isolation in a ward of that part of the hospital set aside for the treatment of infectious diseases. So long as there was fever, and until a suitable interval had elapsed after the subsidence of the fever, each patient was confined to bed. He was however allowed to get up for toilet if his condition warranted this, and in actual practice in most cases this was so after the first few days in hospital. Rest in bed seemed to be the chief treatment required for the condition.

One's impression was that the outcome would have been just the same in most cases had bed rest alone been prescribed. And no doubt serious complications were averted by adherence to this simple rule.

The diet given in the initial phase of the disease was an ordinary mixed light diet, supplemented by the addition of a liberal fluid intake. Water, lemon or lime juice drinks, barley water and Imperial drink were the fluids given. With the subsidence of the fever a change was quickly made to a normal full diet. Where fever was high, fluids alone were given. No special modification was made such as the high carbohydrate intake advocated by some writers.

When sweating was severe the patient received tepid sponging at suitable intervals. It was never considered necessary to add extra salt to the diet to compensate for the salt loss caused by the sweating. Antiphlogistine poultices were prescribed for the relief of pain in the chest when this was severe, as it was in those cases complicated by acute pleurisy. A variety of drugs was used, chiefly for the relief of symptoms. Thus, for the upper respiratory catarrh and sore throat inhalations were prescribed containing menthol or Friar's balsam in the vapour. Potassium chlorate gargles (in a strength of 1 in 40 solution) were given every four hours almost as a routine for the first few days. Practically every patient received an expectorant cough mixture for the relief

of the troublesome cough. The mixture used was of the following formula :-

| | |
|---|---|
| Ammonium carbonate | grains 2. |
| Ipecacuanha wine | minims 5. |
| Compound tincture of camphor | " 30. |
| Syrup of squill | " 30. |
| Syrup of Tolu | " 30. |
| Water | to 1 ounce. |

An ounce dose of this mixture was given every four hours. The syrup of codeine phosphate was given in teaspoonful doses for the alleviation of the painful cough associated with acute pleurisy. Or linctus Scillae was prescribed in the same dosage. As a diaphoretic and analgesic, aspirin gr. 10 or Empirin (Burroughs Wellcome, London) gr. 10, was given every four hours for the first few days.

Chemotherapy was employed in seven cases, but with little or no success. Sulphapyridine was given when consolidation was present or anticipated. But the drug did not appear to have any therapeutic effect and indeed its use did not appear to be called for since the behaviour of the disease was so mild. It was never given for more than five days in all on account of this apparent uselessness. For the first three days it was usually given in doses of one gramme every four hours throughout the twenty-four, and for the ensuing two days in doses of one gramme every six hours. In three instances it was discontinued before the fifth day on account of the appearance of toxic vomiting. It was not considered that the drug exerted any influence in the prevention of more ser-

ious complications such as true lobar pneumonia, empyema or lung abscess. In other words chemotherapy did not appear to have any place in the treatment of acute simple pneumonitis.

Occasionally an alkaline expectorant mixture was given containing in the dose sodium chloride gr. 10 and sodium bicarbonate gr. 10, according to the prescription of the Brompton Hospital. This was given to the patient immediately on awakening in a morning in cases where expectoration was very difficult. Creosote in one minum doses was given in the morning in one case. During convalescence certain tonics were given. Thus the syrup of the phosphate of iron was frequently prescribed. Easton's syrup and Metatone (Parke, Davis, London) were given to one or two cases. A mixture containing strychnin was frequently given three times a day before meals. The formula used was as follows:-

| | |
|---|---|
| Tincture of nux vomica | minims 10. |
| Sodium bicarbonate | grains 10. |
| Peppermint water | to ½ ounce. |

Most of the patients received in addition cod liver oil and malt, half a tablespoonful twice daily.

Results. The outcome of the disease was satisfactory in every case. Every patient returned to full duty after a variable period of sickness. Complications were few and not serious. None of the patients returned to hospital because of some sequel of the disease. In view of this the illness was always looked

upon as a mild one, justifying the description "simple."

Complications. Of the complications pleurisy was the most frequent. There were five cases of acute pleurisy and five of pleurisy with effusion. The effusion of fluid was never very great; there was never sufficient to justify a diagnosis without the aid of radiography. And in no case was the effusion extensive enough to warrant its removal by paracentesis thoracis. In all cases the fluid was quickly absorbed within a week or two at the most.

In one instance the illness appeared during the course of an attack of acute rheumatism. One case was associated with rubella, one with acute catarrhal jaundice, one with Vincent's angina and one with polioencephalitis. One case was complicated by an acute conjunctivitis. The conditions of catarrh, pharyngitis and tonsillitis, so frequently present in the opening phase of the disease, cannot be classified as complications. In most cases therefore the disease was uncomplicated.

Prognosis. With the exception of the case complicated by acute polioencephalitis the prognosis was uniformly favourable. At no time was any anxiety aroused as to the outcome of the disease. With the one exception already named, none of the patients were classified as suffering from serious disease.

Late Results and Sequelae. The late results justified this conclusion, for there were no serious sequelae such as bronchiectasis, organisation of exudate, lung abscess or chronic pleurisy. In no instance did the illness progress into true lobar pneumonia. The question of pensionable disability never arose.

## IV.

### A condensed review of Section III.

From the review of my own series of cases and from an examination of the actual case records themselves it will be seen that the general clinical picture of the disease is identical with that already described in the review of the literature. Allen's (1936) group of cases are characterised, in his own words, "by signs of respiratory infection, benign course, few physical signs, and radiographic evidence of a localised pulmonary involvement." The description adequately summaries the main features of my own cases. The disease is apparently identical with most of the cases described by Bowen (1935) as "acute influenzal pneumonitis." For in most of his cases the picture of influenza does not appear to have been typical, and he obtained no actual proof that the influenza virus was the causative factor of the disease. Gill's (1938) description of three cases of "acute simple pneumonitis" occurring in adults gives a clinical picture similar to that seen here. Maxwell's (1938) cases are identical with my own. All except the severest of the cases reviewed by Smiley, Showacre, Lee and Ferris (1939) are similar to mine. So too are the twenty-one cases of "benign circumscribed pneumonia" of Ramsay and Scadding (1939). And finally the description of the disease as seen by Murray (1940) in 132 students of Harvard University tallies with that given here.

One cannot form any definite conclusion concerning the age and sex incidence of the disease from a review of the reported cases. It would appear, however, that there is no selective age or sex incidence. My own series is drawn from a Service establishment and concerns only adult males. Bowen's report concerns only Army personnel. Most of Allen's cases were young adult males drawn from the Army. The ages in his group ranged from 9 to 51, with an average age of 25.5 years. Gill describes the disease in both children and adults. Maxwell found that the age incidence in his series was evenly spread, the youngest patient being 14 and the oldest 79 years of age. The ages of Ramsay and Scadding's patients varied from 6 to 62 years. Eleven of the twenty-one patients were males and ten were females. Murray's observations were entirely upon students at Harvard University.

In my experience the onset of the disease was predominantly in the late winter and spring of the year. The majority of the cases of Ramsay and Scadding were likewise seen in the months of February, March and April. Murray found that the highest incidence of his cases was in November and December, and concluded from this that the illness was not aetiologically related to the common cold. Evidently the disease is encountered at all seasons of the year.

The onset of the disease was acute, as in the cases of the authors mentioned. The symptoms and signs at onset were variable, but altogether similar to those already recorded. Thus, Bowen describes headache, backache, malaise, a temperature of 100° Fahrenheit, a pulse rate of 90 and a normal respiratory rate. Allen describes the onset as with cough, fever, malaise and "cold in the head." He states that there was a noticeable absence of the symptoms of pneumonococcal pneumonia such as chill, sharp pain and rusty sputum. Where pain was present in his experience it was described as a dull ache or sense of fulness. In no case was there the stabbing pain of pleural involvement, a fact which he explains as indicating that the involvement was almost always central. Maxwell records a similar onset with cough as the most prominent symptom, a temperature averaging 101°-102° Fahrenheit and a pulse rate averaging 100 per minute. The highest respiration rate in his series was 30 per minute. He regarded this as the most significant point of distinction between pneumonitis and pneumonia. Smiley et alia report a similar but somewhat slower type of onset in their cases. With them the illness was ushered in by weakness, malaise and a gradually rising fever, together with cough, pains in the chest or sore throat, or a combination of these symptoms. The onset was insidious in most of the cases of Ramsay and Scadding. Pain

in the chest was present in two cases and haemoptysis in one. In four more the illness dated from an acute upper respiratory infection. Murray's patients complained of headache, malaise, slight chill, slight fever and peripheral aches and pains. Cough was not a prominent symptom at onset in his series.

The clinical course of the illness as seen by me varied very little from that reported in other records. It was essentially mild in the average case. Of the objective findings an injected pharynx was most commonly present. The physical signs were most often localised râles, with only occasionally signs of slight consolidation. Ten of the fifty cases of Allen had no demonstrable signs, and broncho-vesicular breathing was found in only one case. Maxwell claims that he found definite signs of consolidation in almost all of his cases, the chief signs being impairment of the percussion note, weakening of the breath sounds and added sounds. Smiley and his co-workers did not find signs of consolidation in the two groups of their cases which correspond to my own. In eight of the twenty-one cases of Ramsay and Scadding no abnormal physical signs were detected, in nine there were localised signs such as râles or percussion dulness, in five there were signs of catarrh at both lung bases. Murray found a small area of percussion dulness in a little more than half of his cases. Marked widespread dulness was rarely found. Diminution of the breath sounds was found in a majority

of the cases, but bronchial breathing was not common. Added sounds, as in my series, were late in appearing. As in my own experience, a few of his cases developed no abnormal physical signs whatever. In the majority of my group the site of the disease was at the base of one or other or both lungs. Bowen, Allen, Maxwell, Smiley and co-workers, Ramsay and Scadding, and Murray all report similar findings. They found that the mid and upper lung zones were involved less frequently.

The above mentioned authors describe the radiographic appearances of the disease as seen in the lungs. Their descriptions correspond very closely with my own. Thus, Bowen's description of his radiographic findings has already been quoted in part in Section II.; it will be seen to resemble very closely my own. Gill describes radiographic "opacities in the zones under suspicion." Maxwell found an area of consolidation in most of his cases. He found that the area of disease was mostly localised, but that"occasionally a diffuse infiltration, suggestive of tubercle, was seen." Smiley et alia formulated certain conclusions from a review of their radiographic examinations. They found that radiographic evidence of disease in the lungs may not appear until some 36 to 48 hours after the onset of the illness. Their opinion was that the infection spreads outwards from the hilum, following the bronchial and vascular

tree. According to the radiographic appearances they divided their cases into three groups. In the first group "the onset was marked by increased density in the hilar shadows, with a fan-shaped localised accentuation of and a numerical increase in the linear pulmonic markings extending from the hilus into the adjacent lung field. This extension is down into the base in the majority of cases; it may be lateral or, not infrequently, into the first and second interspaces. In the group of cases of milder involvement there then appeared over this area a diffuse even increase in density, not sufficient however to eliminate the linear markings and suggested an intense congestion rather than a true consolidation of lung tissue. The invisible changes did not usually extend to the margin of the lung, and they cleared rather rapidly, ordinarily in from one to two weeks." It will be seen from the above description that these features were reproduced exactly in the milder cases of my own series. In the second group "the infiltration in the fan extended more often to the periphery of the lung, with irregular areas of markedly increased density suggestive of lobular involvement and more typical of definite bronchopneumonia. Resolution was correspondingly slower than in the first group". Here again is the same picture as in my own cases. In about one twentieth of their cases pulmonary involvement was more severe, with a diffuse

spread throughout one lung together with partial or complete involvement of the other lung. In none of my cases was the disease as extensive as this, and in none was the clinical course of the illness as severe as in this third group of theirs. In the experience of Ramsay and Scadding the radiographic appearance most frequently found was an opacity of medium homogeneous density. In some cases "a coarse mottled appearance" was seen. The edges of the opacities were "of not quite regular rounded outline with edges fading off into normal lung tissue." They found that the size of the opacities varied in diameter from about 6 to 7 cm. down to 2 cm. The opacities were predominantly in the bases of the lung. Complete resolution of the opacity was verified in all cases, on an average within six to eight weeks of the onset of disease. Murray describes radiographic changes taking place as early as within twenty-four hours of the onset of symptoms. Likewise he too observed these radiographic changes several days before the detection of abnormal physical signs in the chest. His description of his findings is as follows. "The radiogram usually discloses an area of hazy density extending out from the hilus region into the lower lung field, and occasionally into the midlung field. The margins of this area are ill-definied, shading off gradually into the surrounding normal lung. As the disease progresses,

the area increases in density, may increase in size and become more sharply defined. Resolution occurs as in other types of pneumonia, the density gradually diminishing and becoming more mottled and linear in type. A week to ten days after the peak of the illness, the lung may show only a few linear bands of density in the previously involved area. The characteristic finding is a lobular rather than a lobar distribution of the lesion. Although a whole lobe was involved in a few cases, the majority showed only a section of one lobe to be affected. Basal lesions were commonest....." This description is very similar to that of the radiographic appearances in my own cases.

In Bowen's cases culture of the sputum generally showed streptococcus viridans, and very rarely pneumococci or Pfeiffer's bacillus. In a few of Allen's cases, group IV. pneumococci were isolated in the sputum; in others no pneumonocci were found. Maxwell rarely examined the sputum of his cases and could therefore draw no conclusions regarding any particular type of infection. Likewise Smiley and his co-workers could form no definite opinion from an examination of cough swabs taken from their patients. Ramsay and Scadding were unable to study completely the bacteriology of the sputum. Tubercle bacilli were consistently absent in all specimens. In the few cases where pneumococci were

sought for, they were not found. Murray observed no constant findings in the examinations of sputum from his cases, pneumococci being present in some and not in others, whilst a variety of organisms were found on culture. It has been seen that sputum examinations in my own series of cases were equally inconclusive.

Of other laboratory findings Bowen reports a normal white blood count and normal erythrocyte sedimentation time. Smiley and co-worker found a mild leucocytosis in this disease, with a percentage of polymorphonuclear leucocytes varying in most cases between 63 and 75 per cent. Murray found a normal or only slightly elevated leucocyte count in the average case. It will be seen that the results of these investigations more or less correspond with my own.

All writers report a variable duration of the disease. In my experience the average duration of illness was six weeks. Bowen reports a shorter duration in his series, so short indeed that it seems unlikely that severe influenza was present at all. Allen found that the average duration of the disease was 28 days. Maxwell reports an average duration of 14 days. Most of the cases of Smiley et alia were not detained in hospital for longer than ten days. Eight of the twenty-one cases of Ramsay and Scadding did not even stay away from work. Six more were not confined to bed. The longest period of incapacity in their series was five weeks. Murray records

an average duration of stay in hospital of ten to fourteen days.

The end result of the illness was satisfactory in mine as in the reported cases. Complications were transient and not lasting. Acute sinusitis, acute otitis media, urticaria and peritonsillar abscess were not seen by me as they were by Allen and Murray. Maxwell and Smiley and co-workers observed complicating pleurisy, but not in as high a percentage of cases as in my own. Empyema, true pneumonia and heart failure, reported by Maxwell as complications, were not seen by me.

There is little to be said with regard to treatment beyond the fact that my experience with chemotherapy was the same as that of all authors, namely, that this disease shows no response to chemotherapy.

Bowen was unable to explain the aetiology of the disease as seen by him. He states that neither the cause of the influenza nor of the complicating pneumonitis is known. He regarded his cases as being of a mild or abortive form of influenza pneumonia. He asserts that the pneumonitis occurred in association with the myalgic and catarrhal forms of influenza, but he admits that the familiar description of "flu" is applied to a mild acute respiratory infection which is endemic in Hawaii as elsewhere. Whether his cases were a primary form of acute pneumonitis, or whether they were a secondary form of pneumonitis

occurring in association with mild influenza is not quite clear. Certainly the influenza virus was not isolated. Maxwell regarded the disease in terms of resistance to organismal infection, and did not consider pneumonitis to be a specific entity. Ramsay and Scadding regarded "benign circumscribed pneumonia" as a form of aspiration pneumonia. Allen, Smiley and co-workers, and Murray, on the other hand, looked upon the disease as a specific entity caused by an unidentified virus. It must be admitted that there is no proof that the condition is caused by a virus, though the majority of writers favour this viewpoint.

In comparing my own experience with that of other writers, reference should be made here to other conditions which have been described under the loose title of pneumonitis, atypical pneumonia or virus pneumonia. Meakins (1936) describes chronic pneumonitis, a condition which he defines as "a chronic and recurring inflammation of the lungs which leads to progressive fibrosis with or without cavitation or bronchiectasis." The condition described by us is not the same as this. The course of chronic pneumonitis is essentially protracted. Acute simple pneumonitis has a much shorter course, is uncomplicated by gross changes in the lungs and always resolves completely.

Nor does acute simple pneumonitis resemble in its clinical behaviour the condition described by

Scadding (1937) as "disseminated focal pneumonia." This latter disease has a prolonged course and exhibits radiological changes resembling pulmonary tuberculosis. On the other hand it cannot be denied that acute simple pneumonitis may be a milder form of the more chronic disease and that the two conditions may be related in their aetiology.

Reimann (1938) has described "an unusual form of tracheobronchopneumonia" with severe constitutional symptoms under the title of "atypical pneumonia". The illness reported by him is more severe and prolonged than that reviewed here, but again it is conceivable that the two conditions may be related both in their aetiology and in their pathology.

Several secondary forms of pneumonitis have been described. We have already seen that Bowen regarded the illness as being secondary to influenza. Jeaniseret and Famé (1931), Teschendorf (1933), Begançan, Jacquelin, Lehman and Tribout (1933), Gallacher(1934) and Sayé (1935) all report the occurrence of pneumonitis in association with "grippe", or a similar infection. Possibly most of these cases differed little from my own and in reality were not instances of secondary pneumonitis. What may be regarded as true secondary pneumonitis is seen in association with, and at the site of, a lung abscess, a bronchiectatic cavity, a bronchial neoplasm, pulmonary emboli, or an

area of lung collapse. Pneumonitis has also been described in association with Vincent's angina by Cahan (1937) and Davis and Harper (1931), and in association with rheumatism by Klein (1934). It has been seen that one of my own cases was associated with acute rhaumatism and one with Vincent's angina.

## V.

## General Commentary.

Acute simple pneumonitis has a place in general medicine just as much as lobar pneumonia has a certain place. Within the past three years it has been encountered by me much more frequently than has the more serious disease. Possibly this has been the experience of most other practitioners in this country during the same period.

Yet the malady is not a new one. Rather it is an old one newly recognised. Bowen records that the disease influenza pneumonitis, seen by him in Hawaii within the past ten or twelve years, was apparently a new disease and unknown to the physicians from the United States mainland. Cecil made a study of the pneumonias occurring during the War of 1914-1918. Bowen claims that Cecil (1931) gives a description of an illness closely resembling that reviewed by him. Therefore the condition cannot be claimed as a new disease. But he points out that it is not being recognised even when occurring in epidemic form. He lays stress upon the place of the malady in general medicine and upon the importance of radiological examinations in any mild pulmonary disease.

Allen writes that pneumonitis is generally overlooked because of the reluctance or lack of facilities to carry out radiological examination. He stresses the lack of reference to the disease in the literature. Gill also urges the recognition of "simple

pneumonitis" as a separate entity. Because we know little of the pathology of the disease it is no argument to state that therefore the disease does not exist. Few post-mortem reports are available, but the clinical picture is unmistakable and the associated radiological changes proven. Smiley et alia look upon the condition as "apparently a new acute disease of the respiratory tract". They add however that it is probably only new in their own district of Ithaca, and agree that it is almost certainly the same condition as that described by Bowen. They urge the recognition of the entity pneumonitis, and the more frequent use of radiology as an aid to the diagnosis of the disease. Murray recognises that the malady is not a new one and points out that Stansfield in 1923 described a series of cases resembling his own. He believes the disease to be a separate entity.

Acute simple pneumonitis is obviously not a special war disease. Most of the reports quoted above are of the illness as seen occurring in peace time. But from the writings of Cecil, already referred to, acute simple pneumonitis occurred with especial frequency during the War of 1914-1918. And from all reports received in this country, the disease has occurred during this present war with special frequency among troops stationed here (Lancet 1941). It would thus appear that the malady is more prevalent in war time than in peace-time. No doubt the

explanation for this lies in the increased liability to the spread of infectious disease where over-crowding so often occurs.

The infectious nature of the disease appears to be well established. The incubation period is evidently about two to three weeks. Apparently there is no special age, sex or seasonal incidence. The fact that young adults appear to be especially affected by the disease is in all probability due to the fact that young adults form the bulk of personnel in all military establishments. All attempts to isolate a causative bacterium have failed and all the known facts favour a virus aetiology. Points in support of this theory are the evident contagiousness of the disease, the long incubation period, the clinical behaviour of the disease itself, the inability to demonstrate any known causal organism, and thepeculiar pathological changes found at post-mortem examination.

The differential diagnosis of acute simple pneumonitis is an interesting subject. It covers a large field of pulmonary disease. As an aid to actual diagnosis the importance of radiology is stressed by all students of the subject. From the point of view of actual practice, in an acute febrile illness where on auscultation a localized area of lung inflammation is detected, the immediate differential diagnosis rests with acute bronchitis, acute pleurisy, lobar pneumonia, pulmonary tuberculosis in one of its

forms, and acute simple pneumonitis. In the later stages of the disease diagnosis has to be made from ordinary broncho-pneumonia, bronchiectasis, so-called unresolved pneumonia, and pulmonary tuberculosis again. More rare conditions now to be excluded are atypical pneumococcal pneumonia, lung abscess, typhoid fever, undulant fever, influenzal pneumonia, the severer forms of pneumonitis, and the secondary type of pneumonitis. Such conditions as the chronic pneumonitis of Meakins (1936), chronic diffuse broncho-pneumonia as reported by Scadding (1936) and the disseminated focal pneumonia of Scadding (1937), also enter into the differential diagnosis. Still more rare conditions are psittacosis, tularaemia, allergic bronchopneumonia and coccidoidal granuloma. It will thus be seen that there are few pulmonary diseases which do not enter into the field of diagnosis.

A mistaken diagnosis can readily be made by those unfamiliar with the malady. Thus in the early stages of the disease undue suspicion of pulmonary tuberculosis may be aroused. Or on the other hand a mistaken diagnosis of acute bronchitis may preclude sufficient care being taken in the stages of recovery and convalescence. Experience of acute simple pneumonitis or the knowledge that such a disease does exist should be of value in arriving at an early and exact diagnosis.

It will have been seen that the course of the

disease is extremely benign. The duration is variable and may be very prolonged. But complications are few and not serious. The prognosis is always favourable. But even so, due care should be taken to ensure that the patient is confined to bed for an adequate period of time. For experience has shown that if the subject is allowed to get up too soon a relapse might well ensue, or certainly the period of convalescence will be prolonged. We have had no experience of the severer forms of pneumonitis, but it is not unreasonable to assume that denial of an adequate period of rest in bed will allow of the supervention of a severer form of the malady or even of some other grave pulmonary disease.

The malady is not one which disables a man from military service. It is too benign and transient, and as we have seen leaves no residual disablement. It is therefore not a pensionable disability.

## VI.

## A P P E N D I X.

Since commencing this thesis, farther reviews and notices of work upon the subject have been published. A summary of this work is appended here.

Miller and Hayes (1939) report upon thirty-five cases similar to my own. Their cases were seen during the year 1937-38 at the University of Oregon. The authors refer to the cases of "pneumonitis' described by Gill, but they are unable to distinguish between this term and bronchopneumonia and prefer to retain the older term of pneumonia.

Maxfield (1939) analyses sixty-three cases of an atypical pneumonia with leucopenia seen in Baylor Hospital, Dallas, Texas, but drawn from the general population. The disease occurred in epidemic form, and in most instances was the same as that reviewed in this thesis. One exceptional feature, however, was that the cough was frequently accompanied by haemoptysis. A virus was suspected as being the causative agent. The blood picture was that of a mild leucopenia with a total white cell count varying between 4000 and 12000 cells per c.mm., and with eighty-two per cent. of the cases having a white blood cell count of less than 8000 per c.mm.

Reimann (1938), Reimann and Stokes (1939) and Reimann and Havens (1940) have described a more severe form of pneumonitis, a form with which I have

no acquaintance. It is interesting however to note that one of Reimann's cases (1938) died from meningo-encephalitis, whilst one of mine developed an encephalitis from which he recovered. Reimann (1938) obtained an unusual virus from two of his cases. This virus was weakly virulent for mice and caused pneumonia and encephalitis two weeks after inoculation. Reimann was of the opinion that the disease seen by him was either a severe form of a milder and more common infection, or was a special virus infection, or was an instance of several different infections with clinical characteristics in common. Stokes (1939) published further data upon this virus isolated by Reimann. He first isolated the virus from a ferret and then, by intracerebral and intranasal inoculation, successfully transferred it in series through mice and guinea-pigs until it eventually lost its activity.

Kneeland and Smetana (1940) have recently described a series of cases of pulmonary disease studied at the Presbyterian Hospital in New York. They claim that their cases were all suffering from the same disease but in varying severity. They group their cases into three. Certainly their first group of patients were suffering from a disease very similar to, if not identical with, the acute simple pneumonitis described here by me. Their second and third groups of patients suffered from a disease which was more severe than that seen by me. It would appear that the

pneumonitis, or bronchopneumonia as they prefer to call it, can assume a more serious nature. This fact lends support to the thesis that at any rate a 'simple' form of acute pneumonitis can and does occur. Certain of their facts give evidence that some of their patients transferred the disease one to another. Kneeland and Smetana, whilst admitting the absence of conclusive proof, stress the evidence in favour of a virus aetiology of the disease. They further describe the post-mortem findings in their one fatal case, at the same time pointing out the imprudence of drawing fixed conclusions from one single autopsy. Their post-mortem findings are best described in their own words:- "The interesting feature of this case is the peculiar type of pneumonia of which variousstages are seen in the section: the earliest stage is characterized by a haemorrhagic exudate which later is succeeded by an exudate composed chiefly of monoculear cells with a marked tendency to organization. Other features are the appearance of large mononuclear cells at the periphery of the alveolar spaces forming rows which gradually line the new narrowed lumina, and the fatty changes of the exudate cells. There is an acute interstitial bronchitis or tracheitis with abundant production of muco-purulent exudate. The lesions in the walls of the medium sized branches of the pulmonary artery have the character of peri-arteritis nodosa in its acute form and are all apparently rather

recent. No similar lesions were found in other viscera which is all the more surprising, since periarteritis nodosa of the pulmonary artery is not at all common. The question thus arises whether the vascular changes are the primary factor or are a complication of the pneumonia. In favour of the assumption that the two processes are separate is the point that the pulmonary changes in many places appear less acute and recent than those of the pulmonary arteries." The authors conclude by pointing out that this patient merely seemed to be suffering from the same disease as the other patients of the series.

Longcope (1940) has reported a study of thirty-two cases of what he chooses to term, for sake of convenience "Pneumonia, Variety X." These cases were in his care at the Johns Hopkins Hospital during the last few years. In his experience, as in the experience of Kneeland and Smetana, the disease was of varying severity. Twelve of his cases suffered from a mild attack of the malady. In every respect this group corresponds to my own group of cases. Eleven other cases experienced a moderately severe attack of the disease. Nine patients were severely ill or died. There were two fatalities and Longcope describes the autopsy findings. The lungs showed areas of red, moist solidification. The bronchi were congested and contained tenacious mucoid or purulent material. The significent feature of the

microscopic examinations was that the alveolar exudate consisted largely of mononuclear cells, polymorphonuclear leucocytes being conspicuous by their absence. This fact, as Longcope points out, lends strong support to the theory that the disease is caused by a filtrable virus. In acknowledging the undoubted entity of "a special variety of pneumonitis", Longcope lays stress on his theory "that the same infection may result in a very severe form of illness which may eventually end in death. In support of his contention he instances the communications of Reimann and of Kneeland and Smetana, already referred to. Longcope is not certain that the disease is a new one. He instances the mild variety of migrating bronchopneumonia known as the "non-specific basal infections," as being quite familiar in the past. He notes that the disease is readily transmissible, has a relatively long incubation period, and is in all probability caused by a filtrable virus.

Quite recently differing agents have been claimed as the probable cause of a disease identical with, or similar to, that under review here. Hornibrook and Nelson (1940) have described fifteen cases of acute pneumonitis occurring amongst a laboratory staff of the National Institute of Health, Washington. Dyer, Topping and Bengston (1940) claimed that this outbreak was due to Ricksettsia Burneti. Weir and Horsfall (1940) have reported their results obtained

with the naso-pharyngeal washings from four patients suffering from atypical pneumonia in New York State. They succeeded so far as to produce pulmonary consolidation in the mongoose. Goodpasture, Auerbach, Swanson and Cotter (1939) discovered cytoplasmic inclusion bodies in the alveolar epithelium of the lungs of infants dying from an atypical pneumonia. Adams (1941), too, found these bodies in the bronchial epithelium of nine fatal cases of atypical pneumonia occurring in infants. Sabin (1941) has reported two cases of encephalitic infection with toxoplasma, a protozoan parasite, occurring in children. Likewise Pinkerton and Henderson (1941) have reported two cases of infection with toxoplasma, the toxoplasma being demonstrable in the alveolar wall. Eaton, Beck and Pearson (1941) have recovered a virus similar to the virus of psittacosis from four of six cases of atypical pneumonia.

There is thus seemingly convincing evidence that a virus is capable of producing epidemic pneumonitis in man.

## VII.

## SUMMARY.

The classification of the pneumonias is today yet incomplete. Confusion in differential diagnosis exists because many problems of aetiology are still unsolved. It exists also because the clinical course and type of acute pneumonia appear to have altered within the last few years. Added to which, the more frequent use of radiology in the diagnosis of lung disease has revealed various pathological conditions, the existence of which has never been suspected before.

It is not satisfactory to classify the pneumonias on a purely clinical or anatomical basis. This was the custom in the last century when the two groups of lobar and lobular pneumonia were so clearly defined. Progress in medicine is made with an increase of knowledge of aetiology and pathology. MacCallum (1919; 1920-21) chose to classify the pneumonias according to changes produced in the lungs by the various specific organisms. Ferguson and Lovell(1928-29) argue that the pneumonias can only be satisfactorily classified upon a basis of bacteriology. This is probably true, but the bacteriology and pathology of many lung diseases are yet incompletely studied. Because of this the pneumonias are still being classified, obviously for reasons of convenience, according

to their clinical behaviour. Thus Burrell (1938) has recently suggested that they should be divided into four main groups:- acute pneumonia, bronchogenic pneumonia, secondary pneumonia and lastly, the subacute and chronic types. The latter group includes the acute simple pneumonitis which is the subject of this study. Bullowa (1937) has suggested that they should be grouped into three main divisions:- the bacterial pneumonias, the virus pneumonias and thirdly the chemical and mechanical pneumonias.

It is admitted that some such classification as the above is not only unavoidable but also desirable. One's present thesis is to claim that in what we have chosen to term "acute simple pneumonitis" there is a definite entity which should be included in the new grouping of the pneumonias. It is argued by some, notably by Davidson (1941), that the expression "pneumonitis" should only be employed in terms of the degree of immunity, both local and general, present in a particular lung infection. These writers argue that the expression pneumonitis should not be employed to describe a definite clinical entity. Whether the expression "acute simple pneumonitis" is suitable or no, time alone will tell. Certainly the cases described by me in this Thesis represent a distinct clinical entity. The same condition has been observed by several physicians, whose descriptions I have enumerated at length. Moreover light has recently

been thrown upon the aetiology and pathology of the malady. For this entity I have chosen to retain the expression first used by Morton Gill. The disease is an acute one. Its course is simple. The behaviour of the disease does not resemble that of the pneumonia with which one was formerly so familiar. To me the expression pneumonitis is more suitable than any other. Pending the elucidation of the aetiology of the disease, it is advocated that the name "acute simple pneumonitis" should be accepted into the medical vocabulary.

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## IX.

## CASE RECORDS.

Case No: 1.

E.J.G. Aged fifteen.
Boy.
In training.

Date of admission to hospital: March 7th. 1940.

Previous History: This boy suffered from pneumonia at the age of 9. Following this illness he suffered from frequent colds and attacks of bronchitis.

Family History: There was nothing of consequence in this.

Mode of Onset of the Disease:- The onset was with flitting rheumatic pains, first in both ankles, then in the arms, thighs, neck and lumbar region. The muscles were affected rather than the joints. The onset was also marked by cough.

Physical Examination on admission: The temperature was 99° F., and the pulse rate 100 per minute. There were no joint swellings. Beyond tachycardia there was no abnormality in the cardiovascular system. The throat was injected.

Clinical Course: Muscle pains were complained of for six days only. Because of a persistent low-grade pyrexia a radiogram of the chest(Fig.1. ) was taken on March 22nd. This shewed a lack of transluency and an accentuation of the lung markings in the upper lobe of the left lung. The boy had no cough and no symptoms suggestive of disease of the lungs. There were no abnormal physical signs in the chest.

Three days later there was a return of the pains in the muscles of both legs, and a complaint of sore throat. The throat was clean and not injected, but there was a rise of temperature to 101°F. With an increase in the dosage of salicylates the fever quickly subsided and the pains soon disappeared. Progress thereafter was satisfactory. There were never at any time abnormal signs in the lungs. On April 15th a transitory haemic murmur was audible at the base of the heart. On April 20th, the erythrocyte sedimentation rate being within normal limits, the boy was allowed to get up for the first time. On May 7th he was discharged home on two weeks sick leave. He returned from home feeling fit and was discharged at once to duty.

Laboratory data: The erythrocyte sedimentation rate on the second day of the illness was 7 mm. in one hour (Westergren). On April 20th the reading was 6 mm.

There was no abnormality in the urine.

Treatment: The patient was nursed as a strict bed case, suffering from rheumatic fever. Sodium salicylate was administered at first in 20 gr. doses every four hours. This dosage was soon increased to 20 gr every two hours. Menthol inhalations and potassium chlorate gargles were given for the catarrh and sore throat. The syrup of the phosphate of iron was given

after the first week as a tonic. At the beginning of April the salicylates were discontinued.

Result: This was satisfactory. Recovery from the rheumatism was complete. The condition of concurrent pneumonitis was discovered more or less by chance, and only with the aid of radiography.

Complications: There were no complications.

Name

E. J. G.

No : 1.

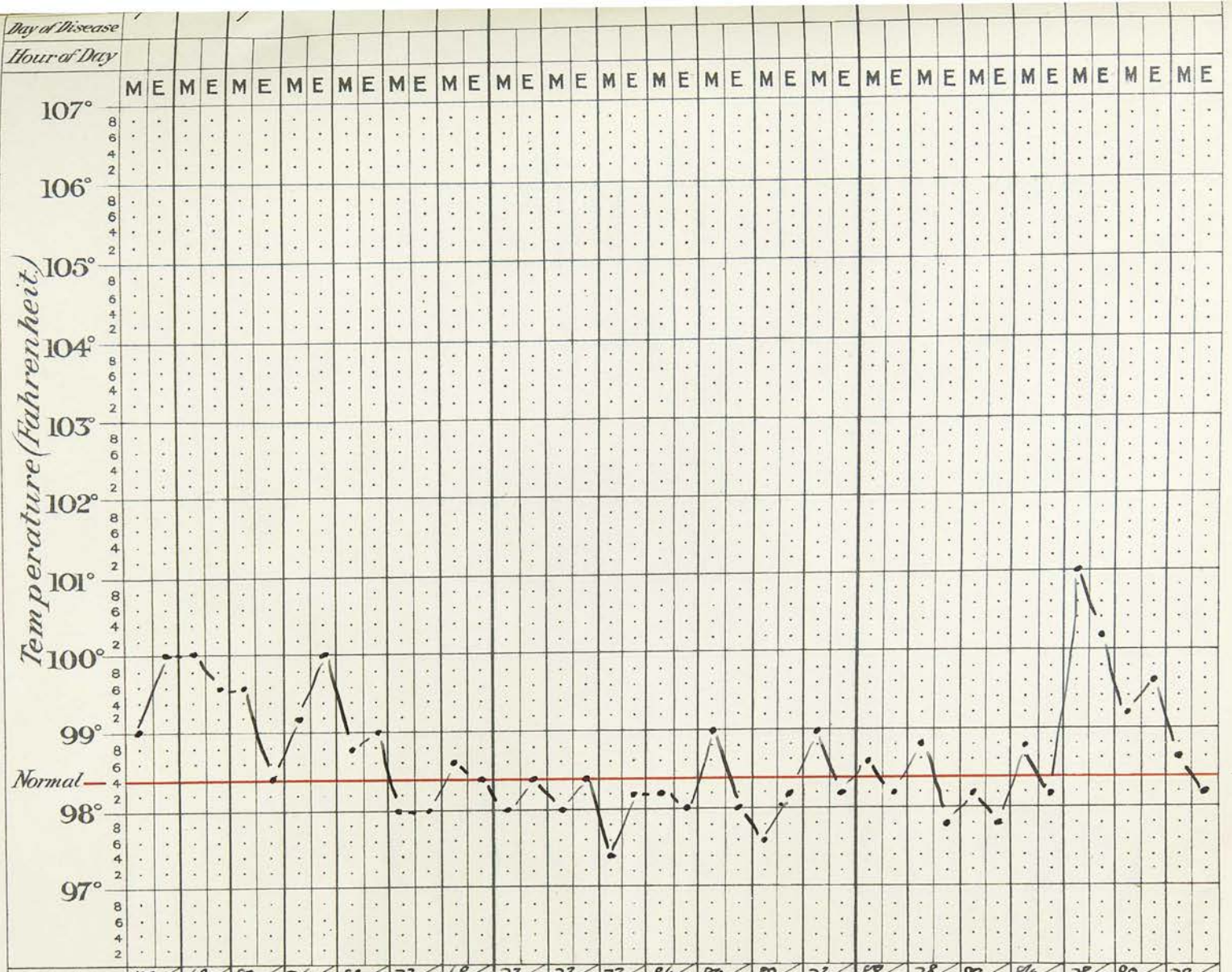
Occupation

Disease

Treatment

Discharged

Result & Notes




CLINICAL CHART.

Printed and Published by Boots Pure Drug Co. Ltd., Head Offices: NOTTINGHAM.

Name

E. J. G.

No: 1.

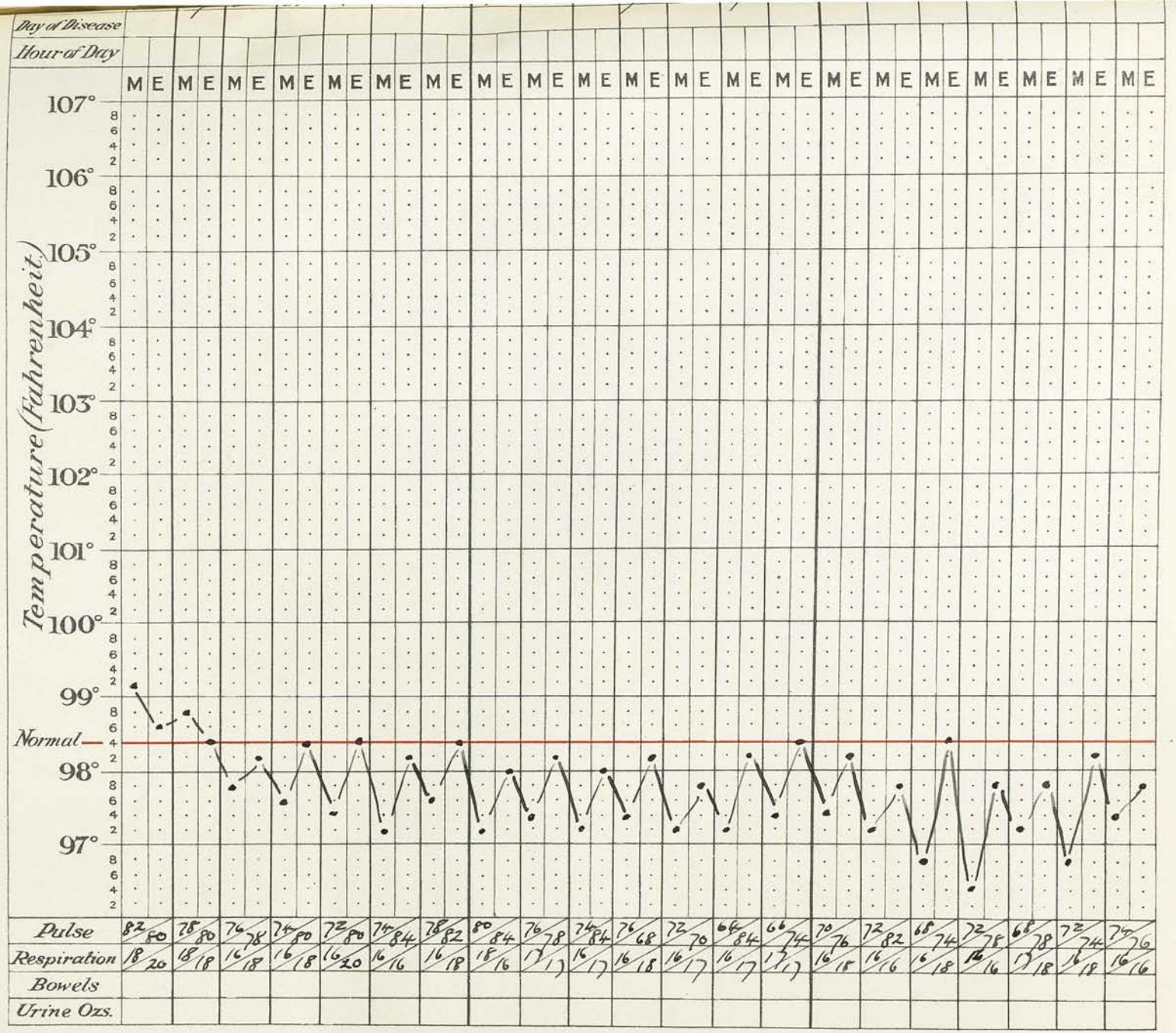
Occupation

Disease

Treatment

Discharged

Result & Notes




CLINICAL CHART.

Printed and Published by Boots Pure Drug Co. Ltd., Head Offices: NOTTINGHAM.

Name

E. J. G.

No: 1.

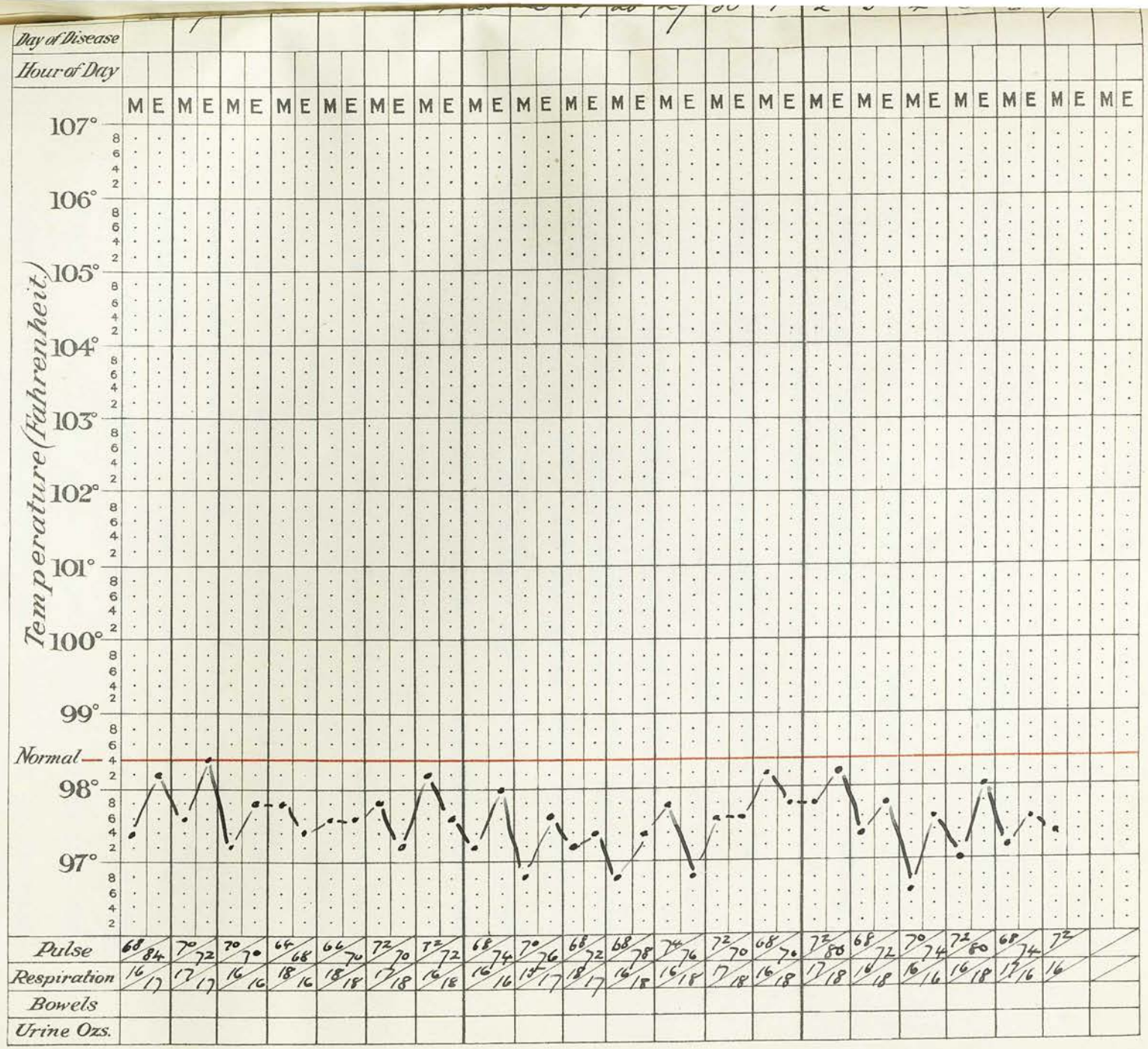
Occupation

Disease

Treatment

Discharged

Result & Notes

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Case No: 2.

J. McQ. Aged fifteen.
Boy.
In training.

Date of admission to hospital: March 11th 1940.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of the disease: The illness began suddenly with severe headache, sore throat, shivering sensations and lachrymation.

Physical Examination on admission: The temperature was 99.8°F. and the pulse rate 132 per minute. The throat was injected, but clean. The tonsillar glands were enlarged and tender.

Clinical Course: The inflammation of the throat subsided by the sixth day. On March 15th the patient began to cough and a few inspiratory rhonci were audible in both lungs. On March 16th a radiogram (Fig. 2 ) was obtained. This showed a small area of medium mottling in the left lower lung field. The left costo-diaphragmatic angle and the line of the left diaphragm were obscured by an opacity suggesting a small collection of fluid. The remainder of the lung fields were clear.

The respiratory rate was at all times normal. On the eighthday the cough was productive of a small amount of mucopurulent sputum. The tonsillar and submaxillary glands remained enlarged for several days. By the twelfth day of his illness the

boy felt and looked much improved. On the sixteenth day coarse crepitations were audible at the level of the inferior angle of the left scapula. The boy was judged fit enough to get up on the next day.

A second radiogram (Fig. 3. ) was obtained on April 1st. This shewed almost complete resolution of the disease. But expectoration was still fairly profuse on this day and the crepitations had become more numerous. By the thirtieth day there was no longer any sputum. On April 15th the patient was discharged home on four weeks sick leave. At the time of his discharge a few coarse crepitations were still audible at the base of the left lung.

Laboratory data: Repeated sputum tests for the presence of B. Tuberculosis were all negative.

Treatment: Potassium chlorate gargles and inhalations of Friar's Balsam were prescribed for the pharyngitis. Aspirin gr 10. was given four hourly during the first four days. An expectorant cough mixture was given with the onset of the cough. To this was added an alkaline and saline expectorant mixture in the early morning and at night, when the cough was most troublesome. After the second week cod liver oil and malt was prescribed daily.

Result: This was satisfactory. The boy was in hospital for five weeks. He was off duty for nine weeks.

Complications: There were no complications other than pleural effusion.

Name

J. Mc G.

No : 2.

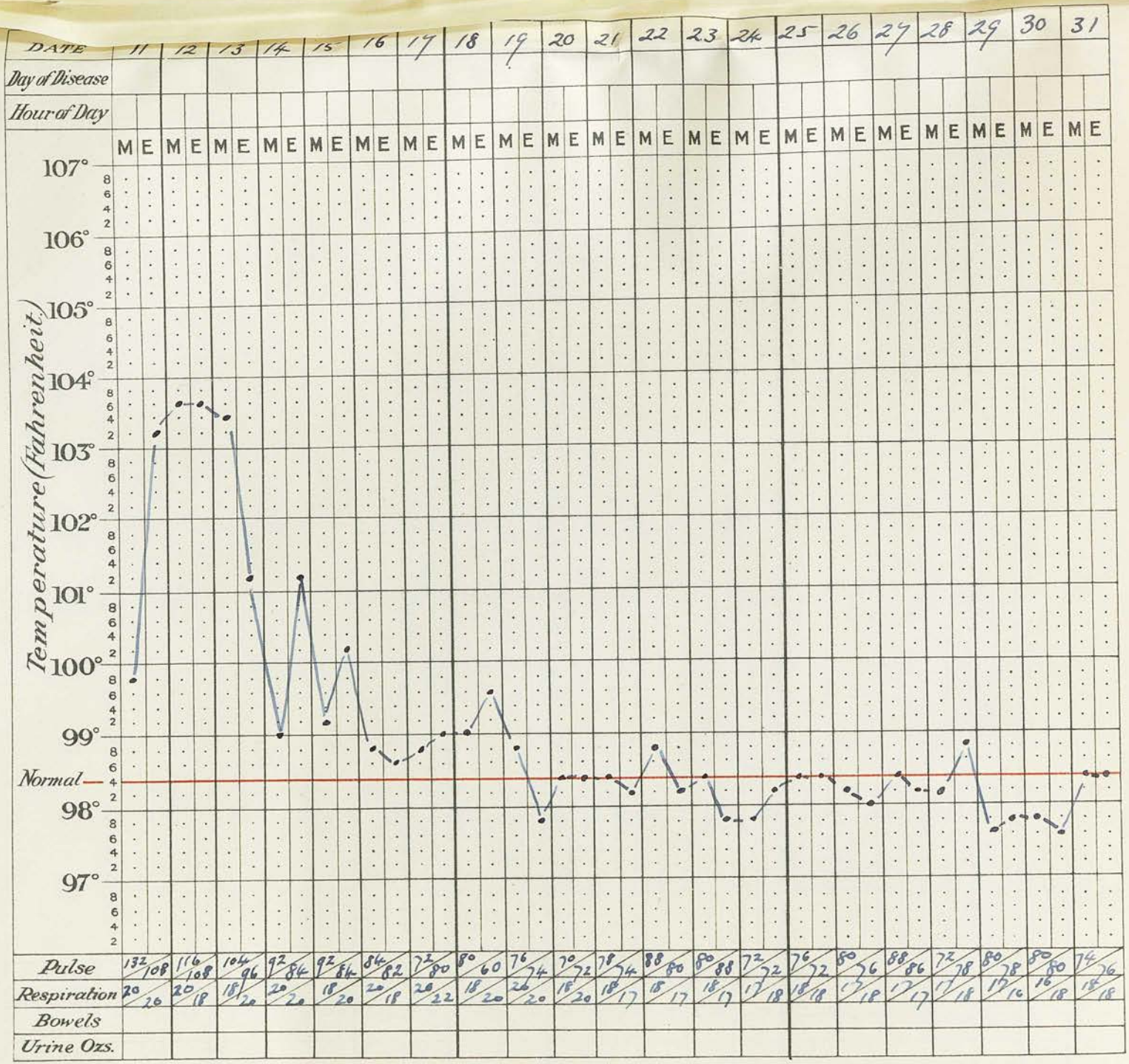
Occupation

Disease

Treatment

Discharged

Result & Notes




CLINICAL CHART.

Printed and Published by Boots Pure Drug Co. Ltd., Head Offices: NOTTINGHAM.

radiogram on April 26th shewed an irregular

April 1940

Name

J. Mc Q.

No: 2.

Occupation

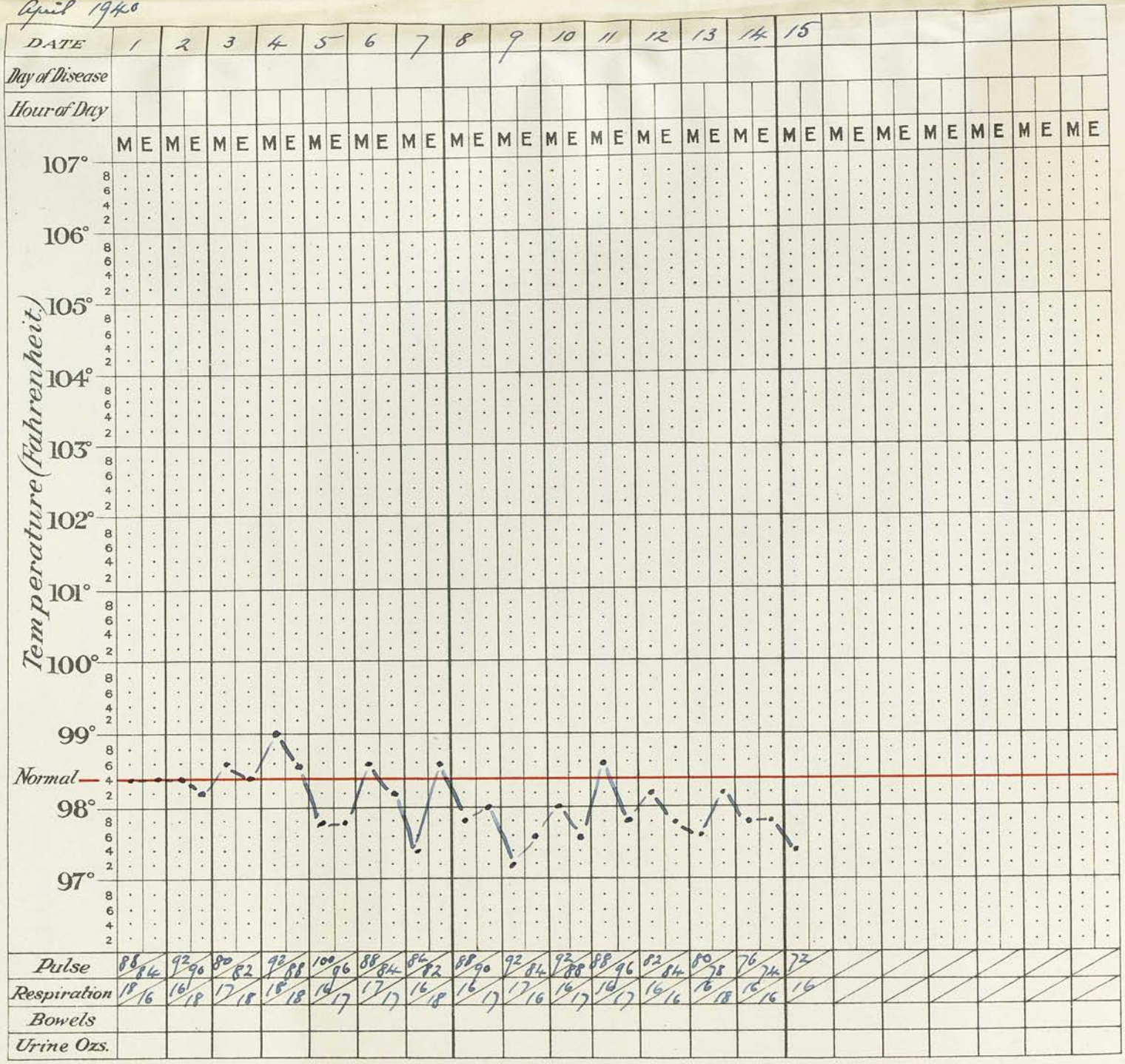
Disease

Treatment

Discharged

Result & Notes

radiogram on April 26th shewed an irregular




CLINICAL CHART. Printed and Published by Boots Pure Drug Co. Ltd., Head Offices: NOTTINGHAM.

Case No: 3.

H.N. Aged twenty-eight
Lieutenant R.N.
Submarine officer.

Date of admission to hospital: April 25th 1940.

Previous History: The patient suffered from pneumonia at the age of 15 and again at the age of 17. He had an attack of bronchitis in January 1940. Since adolescence he had had hay fever every summer.

Family History: There was nothing of consequence in this.

Mode of Onset of disease: The illness began with epistaxis some three weeks before the date of admission to hospital. Ten days later the patient began to cough. The cough was productive of sputum, which for three days was blood-stained. The man also complained of loss of appetite, lassitude, feverishness, and profuse sweating at night time.

Physical Examination on admission: The patient was of good physique. He claimed to have put on weight of late. The temperature was 99.6°F. The pulse rate was 80 per minute and the respiratory rate 20 per minute. The blood-pressure reading was 118 mm. mercury systolic, 70 mm. mercury diastolic. At both lung bases there was slight impairment of the percussion note, diminished resonance, diminished air entry and coarse crepitations. The fauces were healthy. A radiogram on April 26th shewed an irregular

mottled opacity at the base of the left lung. There was an accentuation of the normal lung markings at the right lung base. The remainder of the lung fields were clear.

Clinical Course: The patient complained of nasal catarrh for several days. Examination of the nose shewed no abnormality beyond a deflected septum. The rhinitis and epistaxis were considered to have been due to the particularly foul conditions, with increased atmospheric pressure, in his last submarine trip, which had been a particularly hazardous one. When first admitted to hospital the patient perspired freely during the night. The cough was not very troublesome. The sputum was blood-stained for the first three days only; thereafter it was muco-purulent. The patient was at all times free from distress.

A radiogram on May 5th revealed a uniform opacity at the left lung base extending outwards and downwards from the left lung root. The remainder of the lung fields were now clear. A fluoroscopic examination of the chest made on the same day shewed that the diaphragm moved freely on both sides.

By the eleventh day the breath sounds were entirely free from accompaniments. There was still some dulness on percussion and diminished air entry at the base of the left lung. Seventeen days after admission to hospital the patient was allowed to get up. He was still complaining of epistaxis, but he explained that this was a common complaint amongst submarine

crews. He was discharged from hospital on the twentieth day and given three weeks sick leave. On his return from sick leave there were no abnormal physical signs in the lungs, and he was discharged to duty, feeling perfectly fit.

Laboratory data: Repeated examinations of the sputum were made for the presence of tubercle bacilli, but these were not found.

On April 30th the total leucocyte count was 9,200 per c.mm., with a differential count of 66 per cent. neutrophil polymorphonuclears, 28 per cent. lymphocytes, 4 per cent. mononuclears and 2 per cent eosinophils.

The erythrocyte sedimentation rate on May 12th was 18 mm. in one hour (Wintrobe).

Treatment: Sulphapyridine and an expectorant mixture were given at first. The sulphapyridine was soon discontinued as it appeared to have no therapeutic effect. Menthol inhalations and nasal sprays were ordered for the relief of the nasal catarrh. Cod liver oil and malt was given during convalescence.

Result: This was satisfactory. The patient returned to full duties after being off duty for a period of five weeks.

Complications: There were no complications.

Comment:- The conditions of poor ventilation, poor sanitation, and long confinement in a submarine were extremely provocative of pulmonary disease.

Name

H. N.

No: 3.

Occupation

Disease

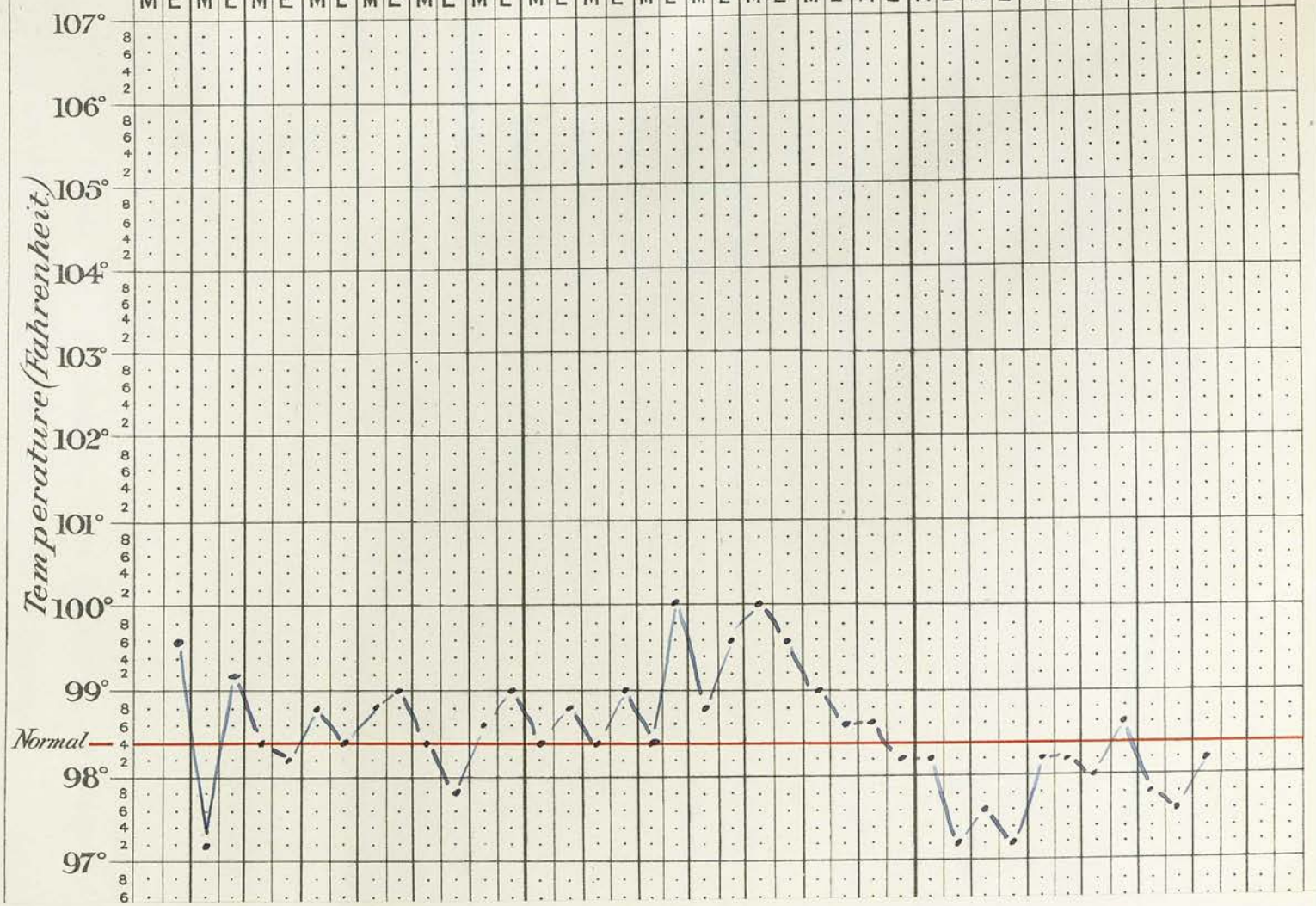
Treatment

Discharged

Result & Notes

April 1940 — May

| DATE | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day of Disease | | | | | | | | | | | | | | | | | | | | |
| Hour of Day | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E |



Case No: 4.

C.F.W. Aged twenty-three.
Ordinary seaman.
In training.

Date of admission to Hospital: August 21st 1940.

Previous & Family History: There was nothing of consequence in this.

Mode of Onset of disease: This was with cough, shivering sensations and constipation.

Physical Examination on admission: The temperature was 101.6° F. and the pulse rate 96 per minute. The respiratory rate was normal. There were medium crepitations and a few rhonci at the base of the right lung.

Clinical Course:- This was marked by the long persistence of accompaniments at one or both lung bases, the patient feeling comparatively well throughout the illness. For the first week the added sounds were audible at the base of the right lung. On the eighth day medium crepitations and rhonci were present also at the base of the left lung. There was a low-grade intermittent fever for two weeks. The cough was productive of fairly copious mucopurulent sputum.

A radiogram of the chest on September 9th (Fig. 4) shewed a very small area of coarse mottling at the base of the right lung. The remainder of the lung fields were normal.

Although on this day medium crepitations were still present at the base of the right lung, the man was allowed to get up for the first time. The

accompaniments at the right base persisted throughout the period of stay in hospital. On September 23rd the man was discharged home on three weeks sick leave. He was provided with an expectorant mixture to be taken throughout his period of leave. On his return from leave he was still complaining of cough with some sputum. The sputum however was less in amount than at first. The breath sounds at all areas were now free from accompaniments. A second radiogram was taken on October 17th (Fig. 5. ). This shewed that the lung fields were normal. On October 21st the man was discharged to light duty. He quickly returned to full duty.

Laboratory data: Repeated sputum tests for B. tuberculosis were negative.

Treatment: An expectorant mixture was given throughout the illness. Cod liver oil and malt was prescribed daily after the first week. When cough was troublesome, an alkaline and saline expectorant was given on waking in a morning. Creosote in 1 minum doses was also given first thing in a morning.

Result: This was satisfactory after a rather long illness. The man was off duty all told for nearly nine weeks.

Complications: There were no complications.

Name

C. F. W.

No: 4.

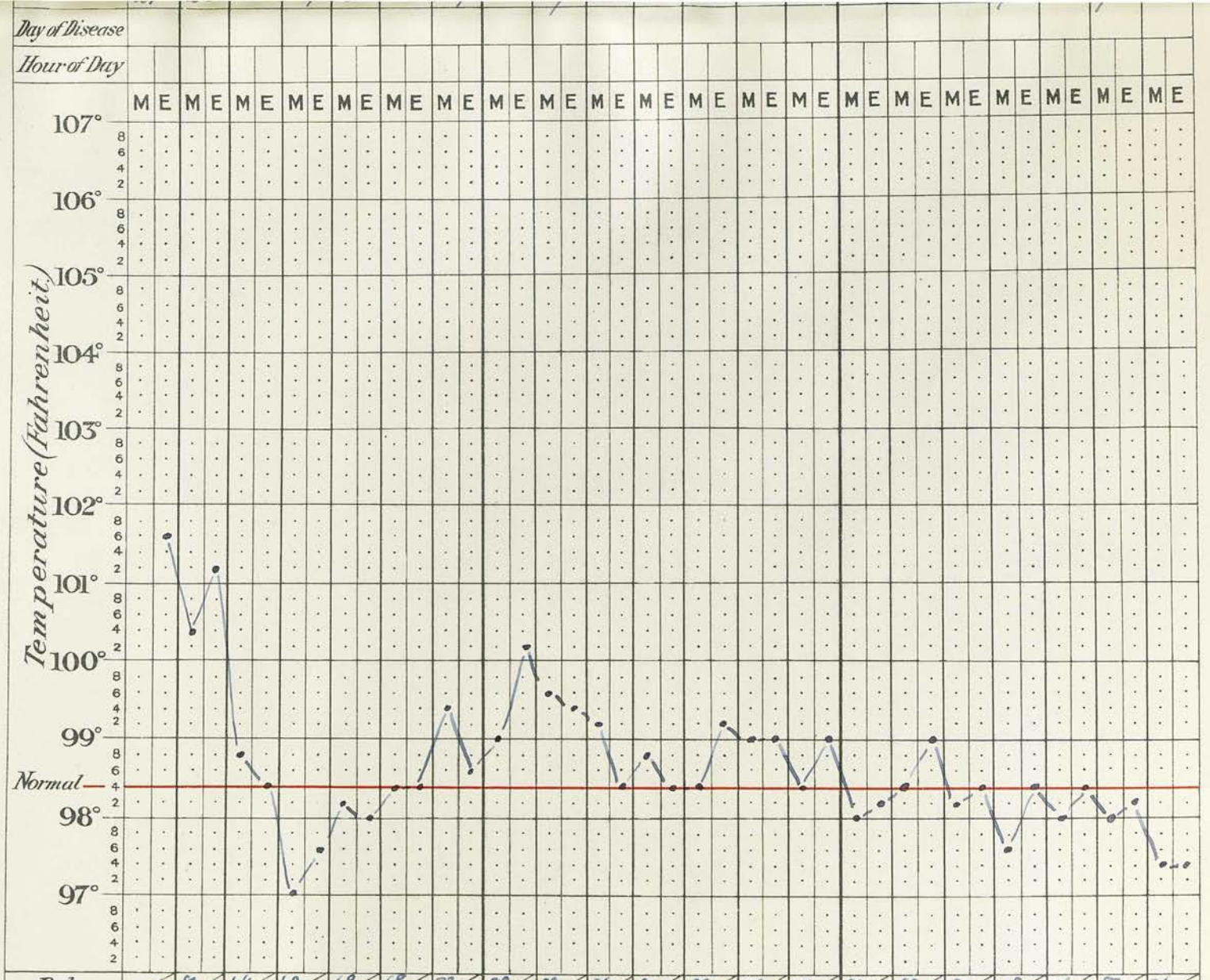
Occupation

Disease

Treatment

Discharged

Result & Notes

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Name

C. F. W.

No: 4

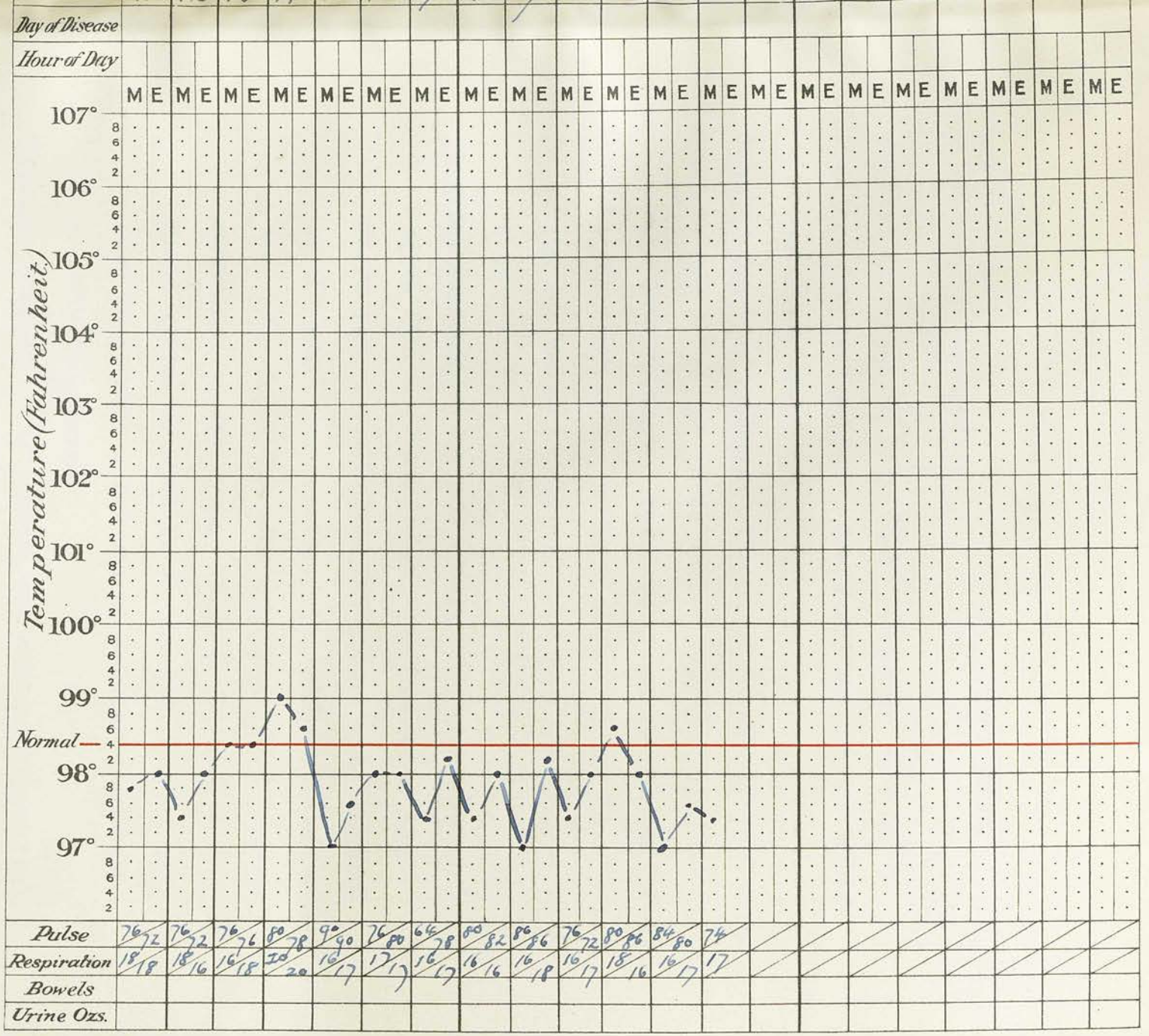
Occupation

Disease

Treatment

Discharged

Result & Notes




CLINICAL CHART.

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Case No: 5.

S.J.A. Aged twenty.
Ordinary telegraphist.
In training.

Date of admission to hospital: December 12th 1940.

Previous Family History: There was nothing of consequence in this.

Mode of Onset of disease: The patient had suffered from a dry cough for three weeks prior to being admitted to hospital. For three days he had had pain in the left side of the chest. He had been boxing and thought that the pain had been caused by a blow on the chest.

Physical Examination on admission: The temperature, pulse rate and respiration rate were normal. There were a few rhonci and coarse crepitations at the right apex posteriorly, and scattered over the left lung. The accompaniments were nowhere numerous. A radiogram (Fig. 6 ) shewed a small irregular opacity in the mid zone of the left lung, with a few coarse mottled opacities at both lung bases.

Clinical Course: The illness was entirely apyrexial. After the second day there were no complaints at all beyond a dry cough. There was never any sputum. On the fourth day the patient said he felt fit enough to return to duty, and was allowed to get up. On the seventh day he was discharged home on three weeks sick leave, there being no abnormal physical signs in the

lungs. On his return from leave he looked and felt very well. A second radiogram (Fig. 7. ) on January 12th 1941 shewed that the lung fields were now clear. He was discharged to duty.

Treatment: An expectorant mixture and cod liver oil and malt were prescribed throughout the duration of stay in hospital.

Result: This was entirely satisfactory. The patient was in hospital for one week and off duty for four and a half weeks.

Complications: There were no complications.

December 1940

Name

S. J. A.

No: 5.

Occupation

Disease

Treatment

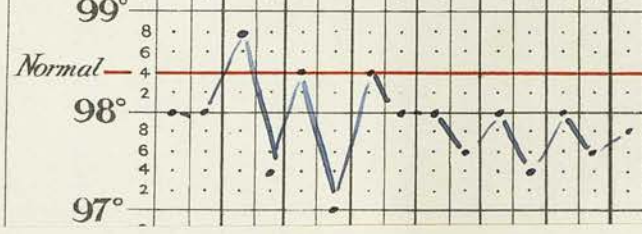
Discharged

Result & Notes

| DATE | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|
| Day of Disease | | | | | | | | |
| Hour of Day | M E | M E | M E | M E | M E | M E | M E | M E |

Temperature (Fahrenheit)

107° 106° 105° 104° 103° 102° 101° 100° 99° Normal 98° 97°



Case No: 6.

G.C.K. Aged fifty-four.
Royal Marine,
H.M.S. Ganges.

Date of admission to hospital: December 16th 1940.

Previous History: There was nothing of consequence in this.

Family History: A brother was suffering from pulmonary tuberculosis.

Mode of Onset of disease: The illness began first with coryza and a cough, next with vomiting, and finally with pain in the left side of the chest and epistaxis.

Physical Examination on admission: The temperature was 98° F., and the pulse rate 84 per minute. The respirations were shallow and at the rate of 30 per minute. The man had a frequent short dry cough, productive of very little mucoid sputum. There was limitation of movement of the left side of the chest but no impairment of the percussion note. The breath sounds were normal vesicular at all areas, and accompanied by bilateral sibilant rhonci. There was no pleural friction rub.

Clinical Course:- On the second day the pain in the left side shifted to the praecordia where a friction rub was now detected. The cough was irritating and kept the patient awake at night. On the second day the scanty sputum was "rusty" in character. The temperature and pulse rate returned to the normal level on the

third day. By this time there was no pain in the chest and expectoration had become more easy. After the third day no pleural friction rub was detected, but fine and medium crepitations were audible over the whole of the lower half of the anterior aspect of the left chest. The accompaniments persisted for some days. On December 24th a radiogram (Fig. 8. ) shewed a diffuse faint opacity in the mid zone of the left lung field extending from the hilum to the lung periphery.

The man was first allowed up on the thirteenth day of his illness. By January 6th the breath sounds were free from accompaniments. The patient was discharged home on three weeks sick leave on January 10th. On his return he went to duty.

Laboratory Data: Albuminuria of the febrile type was present at the onset of the illness.

Sputum tests for the presence of B.tuberculosis were negative.

Treatment: Antiphlogistine poultices were applied to the left side of the chest to allay the pleuritic pain. To alleviate the troublesome cough syrup of codeine phosphate was given at first; it was then replaced by an expectorant mixture. Sulphapyridine was given in 1.0 g. doses every four hours for the first three days and then every eight hours for the two subsequent days. After the second week an acid tonic mixture containing

strychnine was given three times a day before meals.

Result: This was satisfactory. The patient was in hospital for twenty-six days and off duty for thirty seven days.

Complications: There were no complications beyond the initial pleurisy

Name

G. C. K.

No: 6.

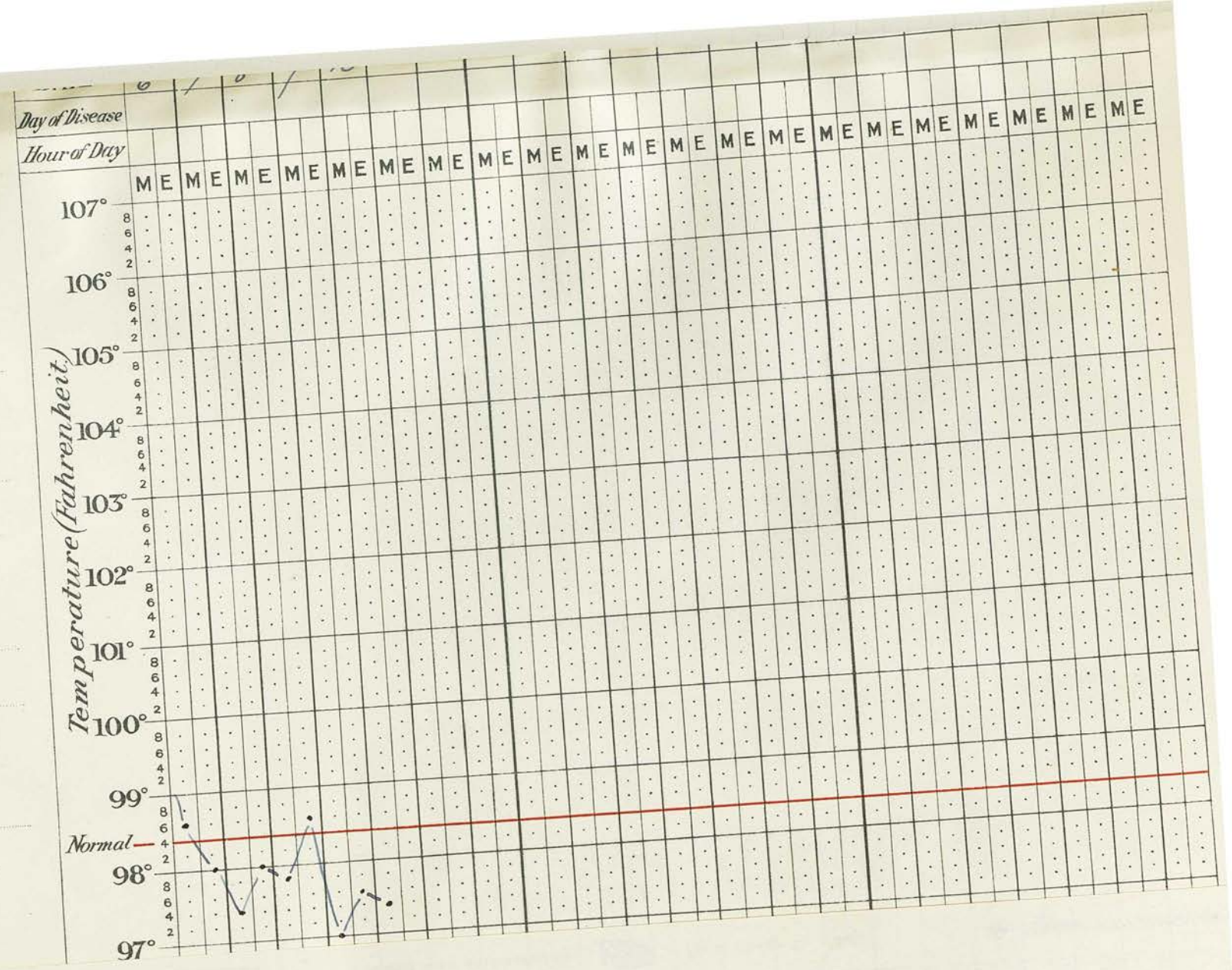
Occupation

Disease

Treatment

Discharged

Result & Notes



Name

G. C. K.

No : 6.

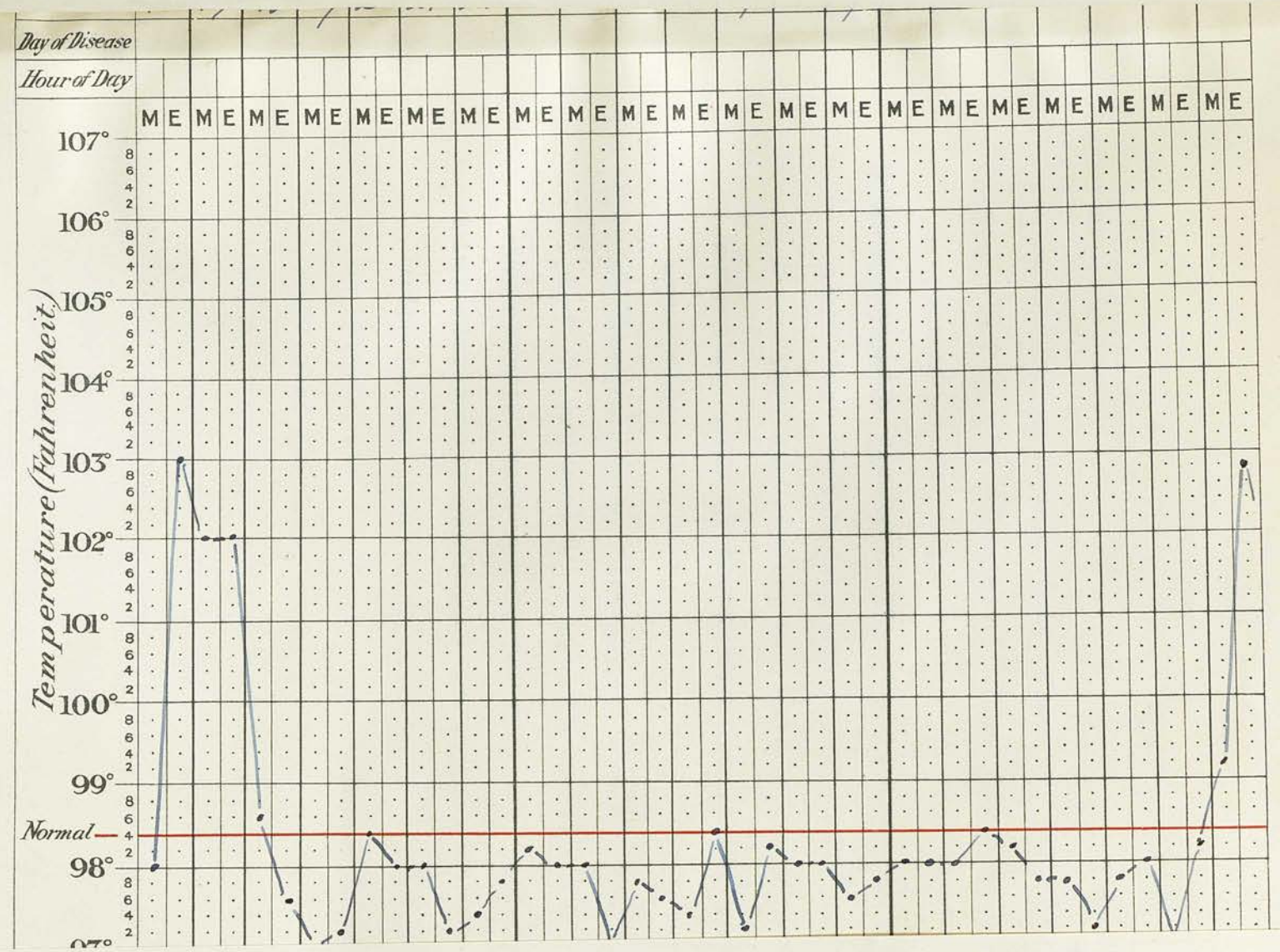
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 7.

E.D.P. Aged twenty-eight.
Ordinary signalman.
In training.

Date of admission to hospital: January 13th 1941.

Previous and Family History:- There was nothing of consequence in this.

Mode of Onset of disease: The illness began with a dry cough four days before admission. For twenty-four hours the patient had felt a sharp pain in the right side of the chest on coughing and deep breathing.

Physical Examination on admission: The temperature was 98.4° F. and the pulse rate 84 per minute. The respiratory rate was 20 per minute; there was no respiratory distress. On inspection both sides of the chest were seen to move freely. On palpation a rough rub was detected in the right axillary line on full inspiration. There was no impairment of percussion note. The breath sounds were harsh vesicular in character. The added sounds were fairly numerous rhonci and coarse crepitations in all areas. A pleural friction rub was heard on inspiration at the level of the fifth rib in the right anterior axillary line.

A radiogram on January 14th (Fig. 9. ) shewed a dense mottled opacity in the right lung base extending outwards and downwards from the right lung hilum and reaching as far as the periphery. There was a small fan-shaped area of similar

mottling in the region of the left hilum. The remainder of the lung fields were clear.

Clinical Course: Once confined to bed, the patient had no distress whatever. The whole course of the illness was apyrexial. Moreover there was no cough at all after the day of his admission to the ward. By the third day of the disease the coarse and medium crepitations were entirely limited to the right lung base. The pleural rub was not heard after the second day and the patient was completely free from pain by the sixth day.

On January 23rd a second radiogram (Fig. 10.) was taken. This shewed an appreciable diminution in the mottling previously seen. On the eleventh day of the disease the patient was allowed up. He complained of some weakness at first but this soon disappeared. By the fifteenth day of the illness the breath sounds were completely free from accompaniments and the physical signs were entirely normal. On January 31st the patient was discharged home on three weeks sick leave. On February 25th he returned from leave feeling perfectly fit and was discharged to duty.

Treatment: No treatment was given beyond confinement to bed, general nursing, and the administration of a tonic mixture containing strychnine.

Result: This was satisfactory. The patient returned to full duty after an absence of six weeks.

Complications: Beyond the initial pleurisy there were none.

Name

E. D. P.

No: 7.

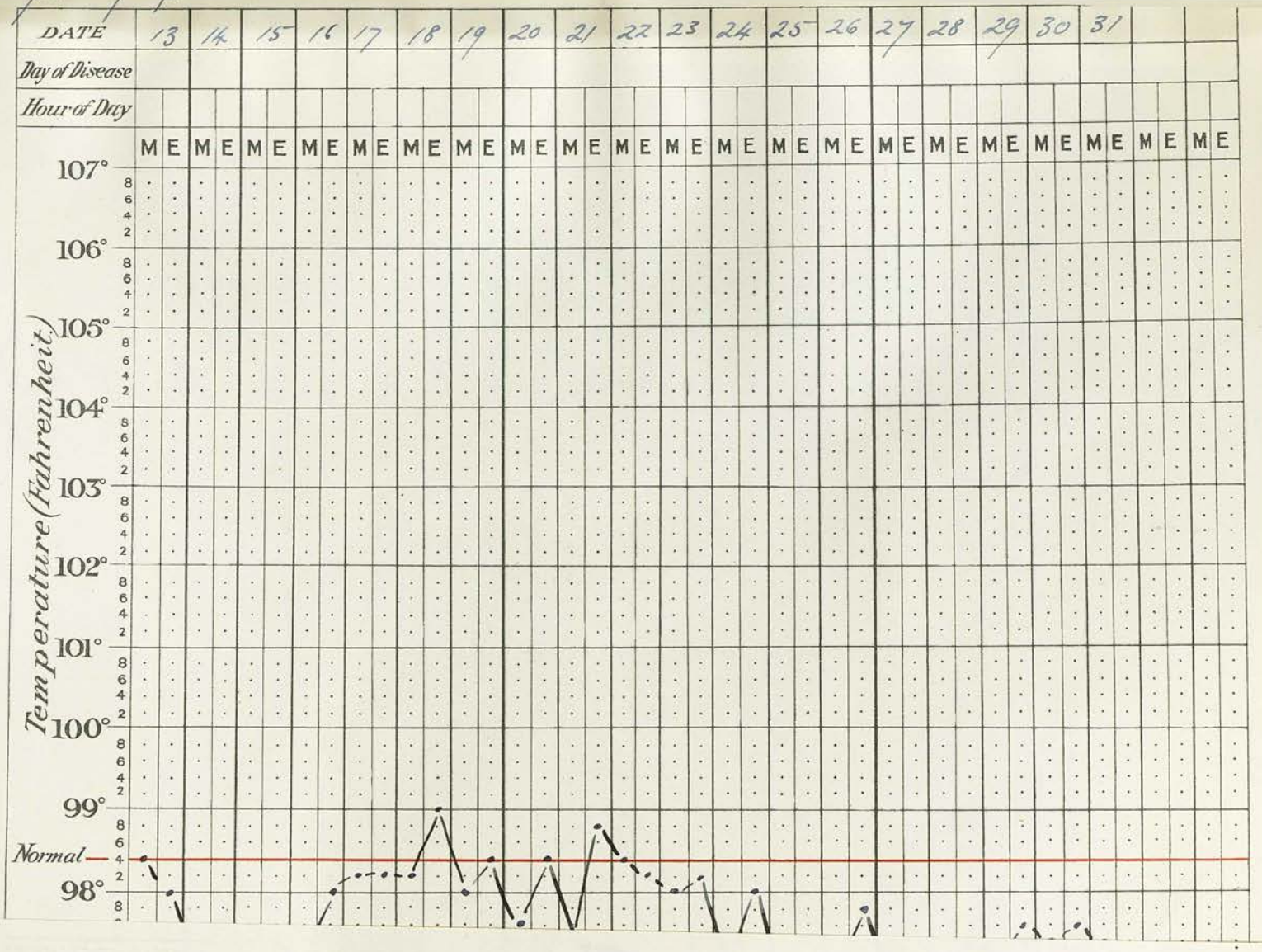
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 8.

C.L.K. Aged twenty-two.
Ordinary Seaman.
In training.

Date of admission to hospital: January 30th 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of disease: The illness began with a severe coryza and headache on January 26th. The patient was uncomfortably hot and sweating during the night time. On the day of admission he developed a pain in the lower part of the back of the chest on deep breathing.

Physical Examination on admission: The temperature was 103.4° F. and the pulse rate 94 per minute. The respiratory rate was normal. There were no abnormal physical signs in the chest beyond a few medium crepitations at the bases of both lungs.

Clinical Course:- The illness was marked by a low-grade pyrexia and variable pulse rate for some three weeks. The respiratory rate was normal at all times. Sweating of moderate intensity was present throughout this time. There was a slight cough with only a small amount of mucopurulent sputum.

A radiogram (Fig. 11 ) on February 4th shewed coarse mottling and accentuation of the lung markings at the bases of both lungs. On both sides the mottling extended from the hilum outwards and downwards to the diaphragm. The upper lung fields were clear.

For several days there was no change in the physical signs at both lung bases. At the end of the second week the crepitations were fewer in number. The patient was now allowed to get up. A second radiogram (Fig. 12 ) was taken on February 18th and this shewed that the lower lung fields were much clearer. On February 22nd the physical signs in the chest being normal, the patient was discharged home on one week's sick leave. On his return on March 3rd a third radiogram (Fig. 13 ) was taken. This shewed that the lung fields were now clear apart from the presence of circular opacities representing engorged blood vessels. The patient was discharged to duty on March 4th.

Laboratory data: Repeated sputum tests for the presence of B.tuberculosis were negative.

Treatment: For three weeks an expectorant mixture was given every four hours. Thereafter cod liver oil and malt was prescribed twice daily.

Result: This was satisfactory. The patient was in hospital for twenty-four days and off duty for thirty-four days.

Complications: There were no complications.

Name

C. L. K.

No: 8.

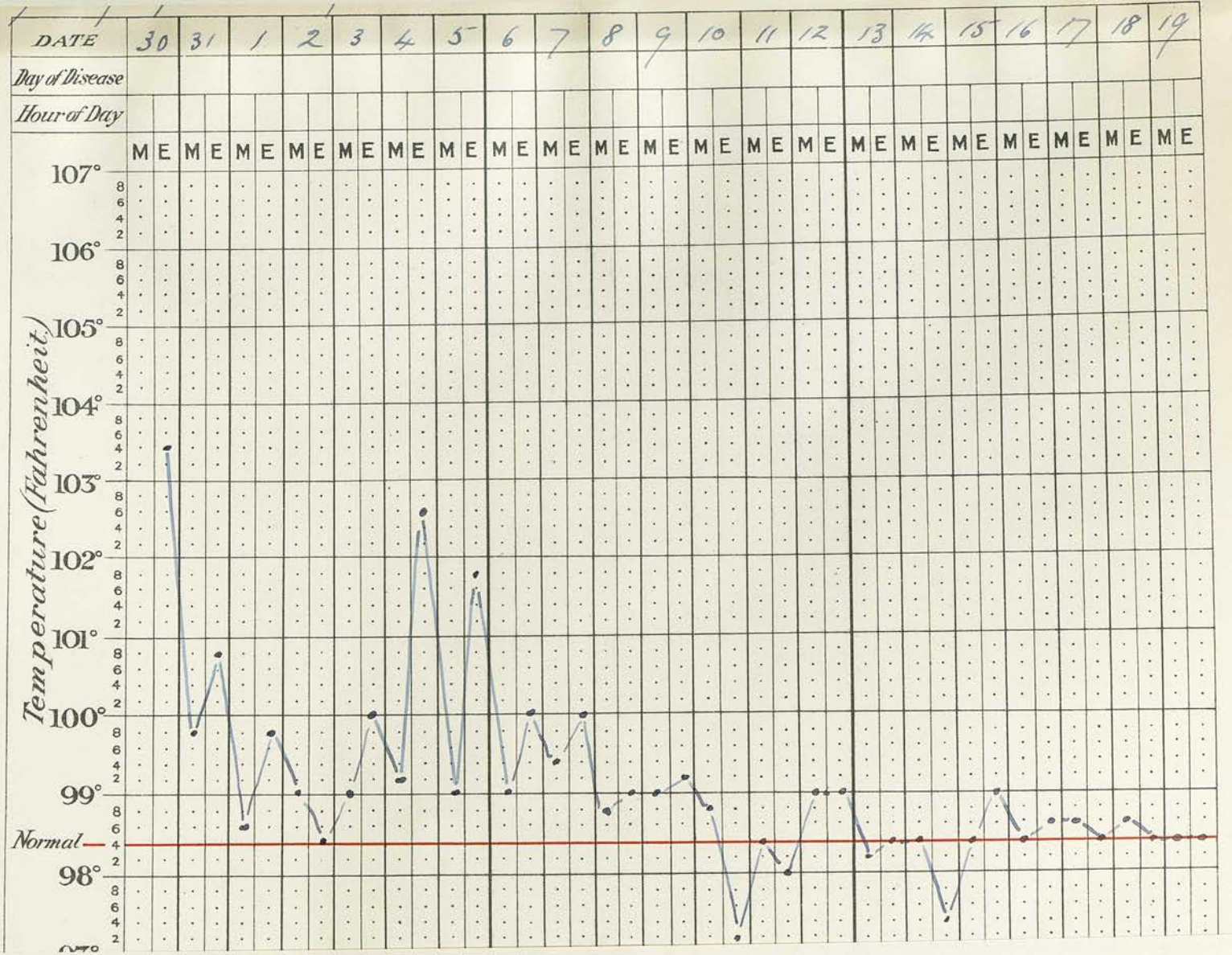
Occupation

Disease

Treatment

Discharged

Result & Notes



Name

C. L. K.

No: 8.

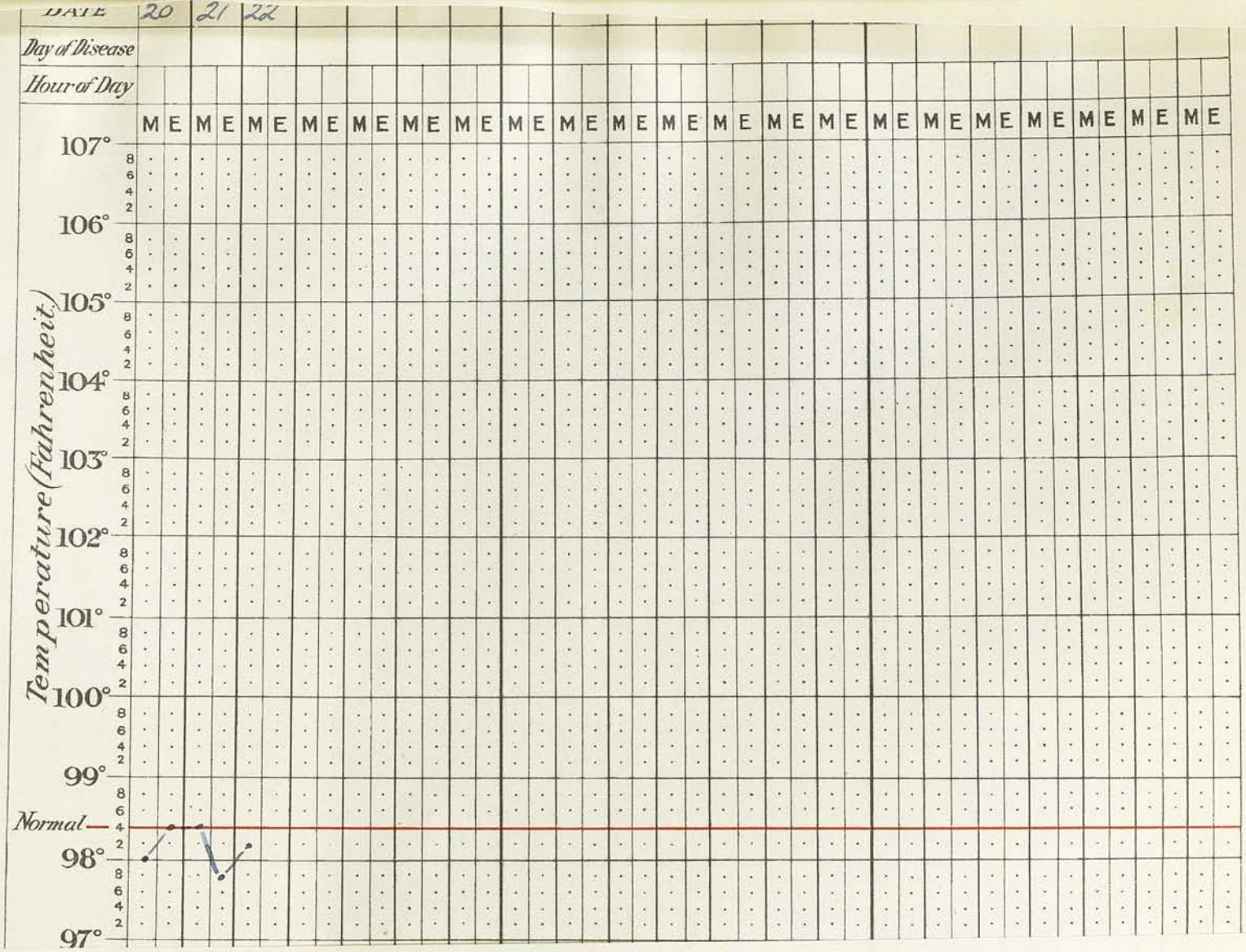
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 9.

A. K. Aged nineteen.
Ordinary Seaman.
In training.

Date of admission to hospital: February 11th 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of disease: This was with coryza, hoarseness and dry cough. On the evening of February 11th the patient was suddenly seized with a sharp pain in the right side of the chest. The pain was felt on deep breathing, on movement and on coughing.

Physical Examination on admission : The temperature was 98° F. and the pulse rate 80 per minute. The pulse was of poor volume. The respirations were at the rate of 36 per minute, and were shallow and irregular because of the associated pain. There was some limitation of movement at the base of the right lung. The percussion note was slightly impaired here, and air entry was diminished. Fine crepitations were audible at the base of the right lung, most marked behind.

Clinical Course: The whole course of the illness was afebrile. The pulse rate never exceeded 80 per minute, and the respiratory rate quickly returned to normal. By the fourth day of his illness the man was free from pain. There was never any sputum during the illness.

On February 12th a radiogram (Fig 14) shewed coarse and medium mottling throughout the lower half of the right lung field and mid zone of the left lung field. The inter-lobar septum was delineated on the right side.

The man was kept in bed for one week and then allowed to get up. The physical signs in the lungs were now normal. After being up for five days the patient asked to go back to duty and was allowed to do so.

Treatment: Antiphlogistine poultices were applied to the base of the right lung twice daily until the pain had been relieved. An expectorant mixture was given for the relief of the cough.

Result: This was satisfactory. The patient was in hospital and off duty for twelve days.

Complications: There were no complications.

Name

A. K.

No: 9.

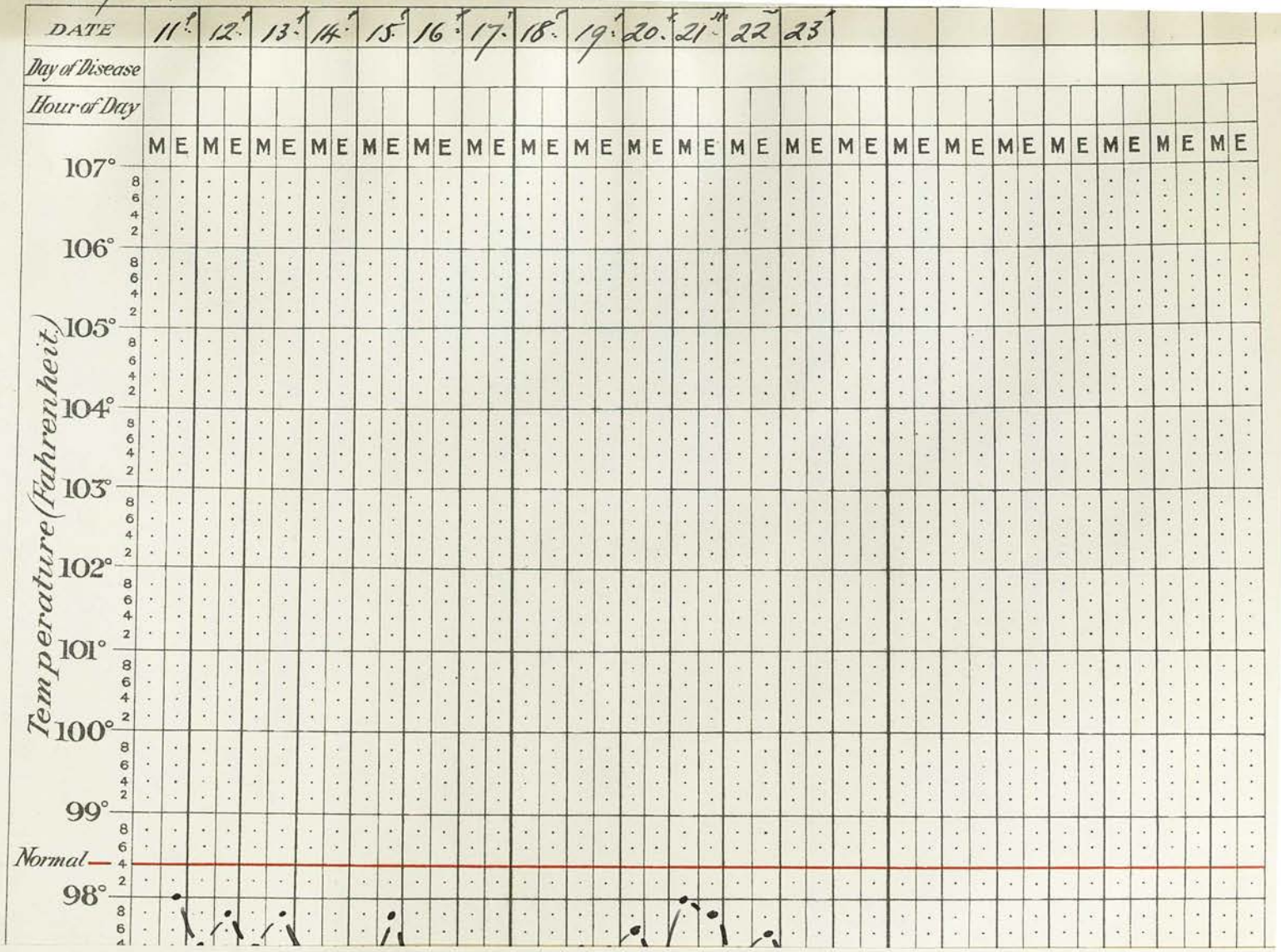
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 10.

J. McP. Aged fifty-two.
Lieutenant Commander R.N.R.
From Admiralty Salvage Department.

Date of admission to hospital: February 11th 1941.

Previous History: The patient suffered from influenza in 1940.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: For three weeks prior to admission this Officer had had a cough with sputum. Since February 8th he had complained of pain in the left side of the chest, and of generalised aches and pains in the muscles. On admission he complained in addition of headache and loss of appetite.

Physical Examination on admission: The temperature was 104° F. and the pulse rate 120 per minute. The respiratory rate was 30 per minute. On deep breathing there was pain at the left base, where coarse crepitations and rhonci were audible. There were no other abnormal physical signs in the chest. The throat was injected and there was some post-nasal catarrh.

Clinical Course: On the day following admission there was dulness on percussion, increased vocal resonance and bronchial breathing at the left base. By the fourth day the patient felt much improved, the pain in the side being no longer constantly

felt. He was allowed to get up for a short time on the eight day. By the tenth day he had no complaints beyond a slight cough with only a moderate amount of mucopurulent sputum. The signs at the base of the left lung no longer suggested consolidation, the breath sounds being harsh vesicular and accompanied by coarse crepitations. The patient did not feel tired when up for a few hours each day.

A radiogram (Fig. 15 ) on February 23rd shewed an area of coarse and medium mottling throughout the lower half of the left lung field, suggesting an area of consolidation and resolving.

The man's general condition was now very good and he was allowed to be up all day on February 25th. Two days later he was discharged home on twenty-four days sick leave. On his return he felt quite fit and had no complaints apart from a cough with a slight amount of mucopurulent sputum. A second radiogram (Fig. 16) on March 23rd. shewed complete resolution of the former disease. The officer was therefore discharged to light duty for fourteen days and then to full duty.

Laboratory data : Repeated sputum tests for B.tuberculosis were negative.

Treatment: On admission antiphlogistine poultices were applied to the left side to relieve the pain. Sulphapyridine 2.0 g. was given at once, and 1.0 g. four hourly thereafter for

four days and eight hourly for two further days. An expectorant mixture was given four hourly to facilitate the production of sputum. For the first twenty-four hours brandy was given four hourly in half ounce doses. From February 24th an acid tonic mixture containing strychnine was prescribed. During his period of sick leave and whilst on light duty the patient received Metatone as a tonic.

Result: This was satisfactory. The patient was in hospital sixteen days and off full duty for forty days.

Complications: There were no complications.

February

Name

J. McP.

No: 10.

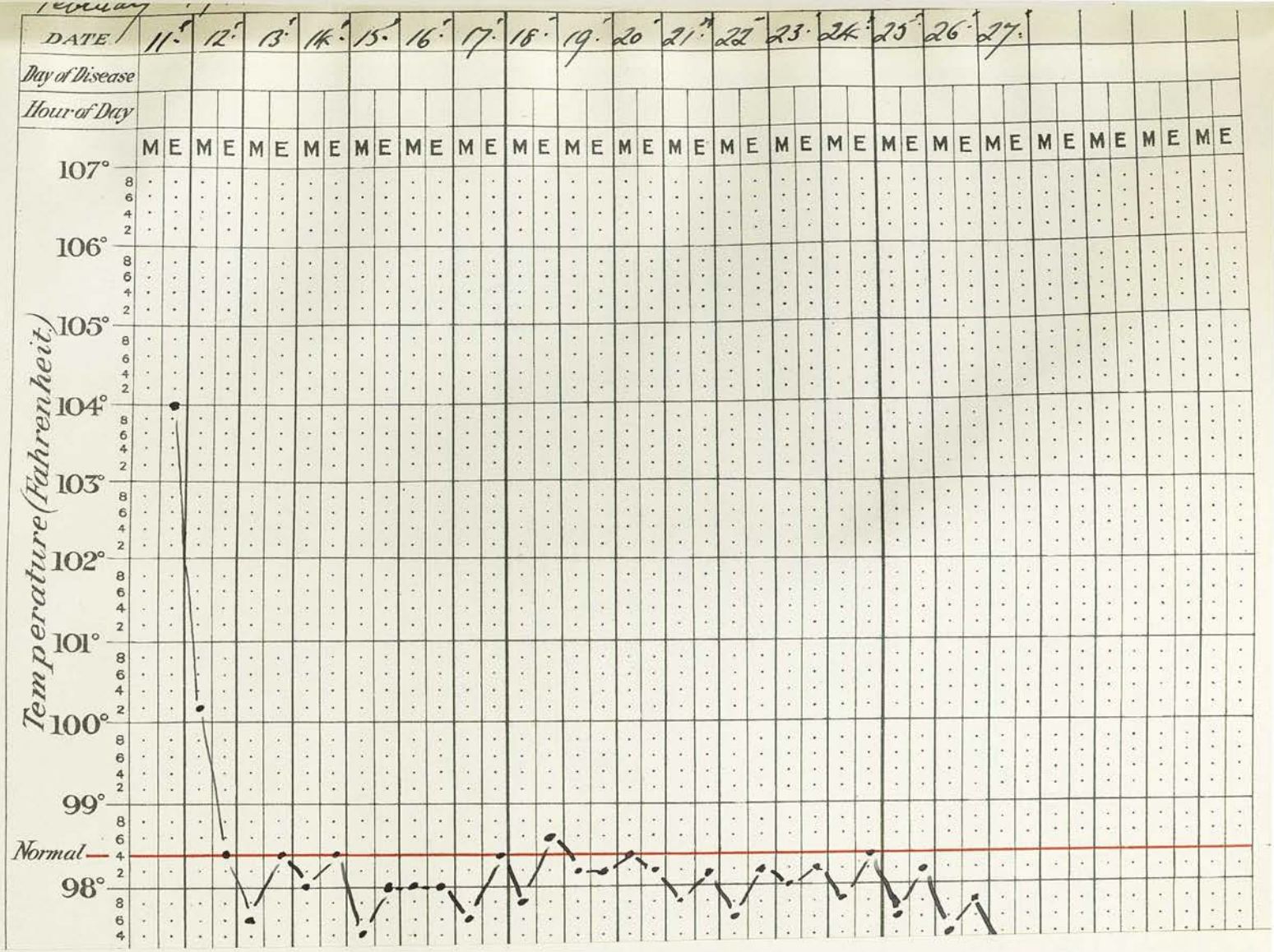
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 11.

D.V.Y. Aged thirty-two.
Ordinary Seaman.
In training.

Date of admission to Hospital: February 26th 1941.

Previous and Family History : There was nothing of consequence in this.

Mode of Onset of Disease: The patient was seized with pain in the epigastrium whilst doing physical training in the gymnasium. The man had a dry cough. The pain was severe on exertion, coughing and deep breathing. There was hoarseness of the voice on admission.

Physical Examination on admission: The temperature was 100° F. and the pulse rate 82 per minute. Respirations were shallow and irregular and at the rate of 26 per minute. A pleural rub was audible below and external to the left nipple. The throat was slightly injected.

Clinical Course: On March 1st there was dulness on percussion and absence of the breath sounds at the base of the left lung. The pleural rub was no longer audible. The man felt much better on this day. There was now no pain except on very deep breathing.

A radiogram (Fig. 17 ) on March 3rd shewed obliteration of the left costo-diaphragmatic angle by a small opacity suggesting a pleural effusion. There was a small area of coarse mottling at the very base of the left lung field. The remainder of the lung fields were clear.

There was never any sputum and the cough was never troublesome. On March 7th the man was allowed to get up. By March 15th he felt very well and was free from all symptoms. There were no abnormal signs in the lungs. A radiogram (Fig. 18 ) on this day shewed that the lung fields were now entirely clear, indicating complete resolution of the former disease. The patient was discharged home on three weeks sick leave. On his return he went to full duty.

Treatment: Antiphlogistine poultices were applied to relieve the pleuritic pain. Inhalations of steam containing Friar's Balsam were ordered for the relief of the hoarseness. An expectorant mixture was given three times a day. During the second week of the illness an acid tonic mixture containing strychnine was prescribed.

Result: This was satisfactory. The patient was in hospital for nineteen days and off duty for forty days.

Complications: The pneumonitis was accompanied by a pleurisy with a small effusion of fluid.

Name

J. V. Y.

No: 11

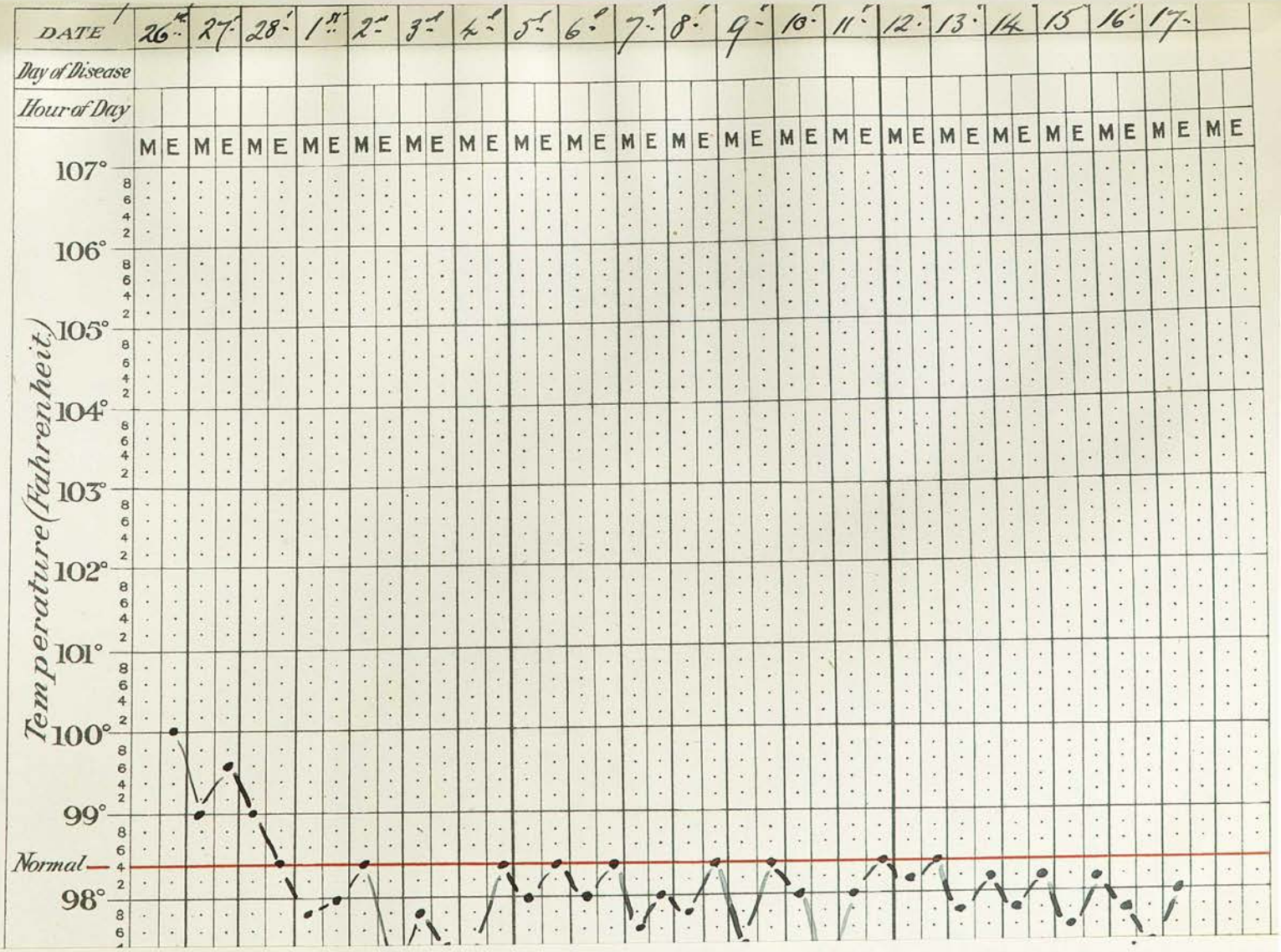
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 12.

Aged eighteen.

P. F.
Ordinary signalman.

Date of admission to hospital: March 7th 1941.

Previous and Family History : There was nothing of consequence in this.

Mode of Onset of Disease: The illness began with the symptoms of a cold in the head, pain in the right side of the chest and vomiting.

Physical Examination on admission: The temperature was 99° F., the pulse rate 80 per minute and the respiratory rate 22 per minute. There was dulness on percussion, diminished resonance and diminished breath sounds in the mid zone and at the base of the right lung. A pleural rub was heard in the right anterior axillary line. A radiogram (Fig. 19 ) on March 8th shewed a dense opacity in the mid zone of the right lung extending outwards from the hilum and reaching as far as the periphery of the lung. The lower border of this shadow was sharply defined by the interlobar septum. The upper border of the shadow merged indefinitely with the upper lung field. The opacity suggested intense congestion or consolidation of the lung tissue with probably a small collection of fluid.

The throat was slightly injected.

Clinical Course: The patient was entirely comfortable

throughout his illness. There was some cough with mucopurulent sputum. By the fourth day of the disease the only abnormality in the physical signs was the presence of a few medium crepitations at the base and mid zone of the right lung. By the eleventh day the physical signs were normal and the patient was allowed to get up for the first time.

On March 18th a second radiogram (Fig. 20) shewed complete resolution of the disease, with thickening of the inter-lobar septum. On the nineteenth day of the disease the patient was discharged home on two weeks sick leave. He returned feeling well and was discharged to duty on April 11th.

Laboratory data: Repeated sputum tests for B. tuberculosis were negative.

Treatment: An expectorant mixture was given at the commencement of the illness. This was later replaced by Easton's syrup.

Result: This was completely satisfactory. The patient returned to full duty after an absence of five weeks.

Complications: There were no complications beyond the pleurisy at the onset of the illness.

Name

P. F.

No: 12

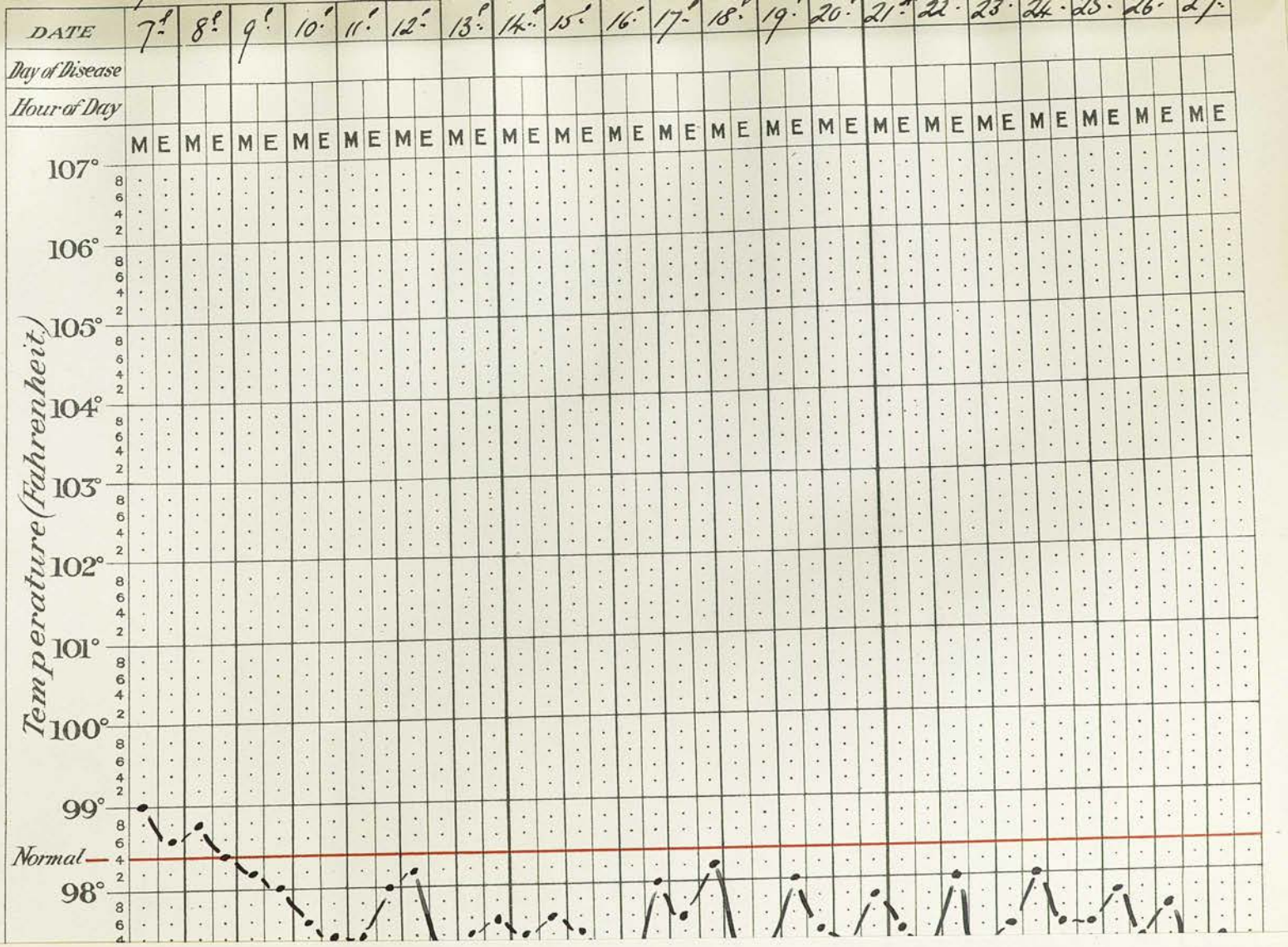
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 13.

Aged twenty-five.

E. P.
Ordinary Seaman.
In training.

Date of admission to hospital: March 12th 1941.

Previous History: The patient suffered from catarrhal jaundice in 1937.

Family History: There was nothing of conseuence in this.

Mode of Onset of Disease: One week before admission the man had several teeth extracted. He then developed the symptoms of a head cold together with a pain in the right side of the chest. This was followed by the onset of jaundice.

Physical Examination on admission: The patient was very thin. He was slightly jaundiced. The temperature was 100.2° F., and the pulse rate 84 per minute. The respiratory rate was normal. The site of the pain in the chest was along the right lower costal margin. There was limitation of movement at the lung base with some dulness on percussion. The breath sounds were deficient here. A radiogram (Fig. 21 ) on March 13th shewed an area of coarse mottling at the right lung base extending outwards from the hilum and reaching as far as the periphery of the lung. There was a thin uniform opacity in the right costo-diaphragmatic angle suggesting a small collection of fluid.

Clinical Course: After the second day the patient was free from pain in the chest except on deep

breathing or coughing. He had very little cough and there was no sputum. The degree of jaundice was only slight. By the tenth day of the illness the jaundice had disappeared altogether. The pain felt in the side on deep breathing did not disappear until the fourteenth day of the illness, by which time the man was allowed to get up. On the nineteenth day there were no complaints at all and the patient was discharged home on two weeks sick leave. At the time of his discharge to sick leave there was still some dulness on percussion and deficiency of breath sounds at the right base. At no time throughout the short period of illness were any accompaniments to be heard. On return from sick leave the physical signs in the chest were normal and the man was discharged to duty.

Laboratory data: Throughout the period of illness the stools were of normal colour and the urine shewed no excess of bile pigments, bile salts or bile acids.

On March 15th the blood red cell count was 4,960,000 per c. mm. The haemoglobin was 76 per cent. of the normal. The total leucocyte count was 6000 per c. mm., with a differential count of 67 per cent. neutrophil polymorphonuclears, 21 per cent. lymphocytes, 10 per cent. mononuclears and 2 per cent. eosinophils.

Treatment: Antiphlogistine poultices were applied to the right side of the chest to alleviate the

breathing or coughing. He had very little cough and there was no sputum. The degree of jaundice was only slight. By the tenth day of the illness the jaundice had disappeared altogether. The pain felt in the side on deep breathing did not disappear until the fourteenth day of the illness, by which time the man was allowed to get up. On the nineteenth day there were no complaints at all and the patient was discharged home on two weeks sick leave. At the time of his discharge to sick leave there was still some dulness on percussion and deficiency of breath sounds at the right base. At no time throughout the short period of illness were any accompaniments to be heard. On return from sick leave the physical signs in the chest were normal and the man was discharged to duty.

Laboratory data: Throughout the period of illness the stools were of normal colour and the urine shewed no excess of bile pigments, bile salts or bile acids.

On March 15th the blood red cell count was 4,960,000 per c. mm. The haemoglobin was 76 per cent. of the normal. The total leucocyte count was 6000 per c. mm., with a differential count of 67 per cent. neutrophil polymorphonuclears, 21 per cent. lymphocytes, 10 per cent. mononuclears and 2 per cent. eosinophils.

Treatment: Antiphlogistine poultices were applied to the right side of the chest to alleviate the

pain. Linctus scillae was prescribed for the cough when troublesome. A fat free diet was given for the first few days. After the second week the patient was given a carminative mixture containing strychnine.

Result:- This was satisfactory. The man was off duty for thirty-three days.

Complications:- The illness was complicated by mild catarrhal jaundice. The pneumonitis was acacompanied by pleurisy with slight effusion.

Name

E. P.

No: 13

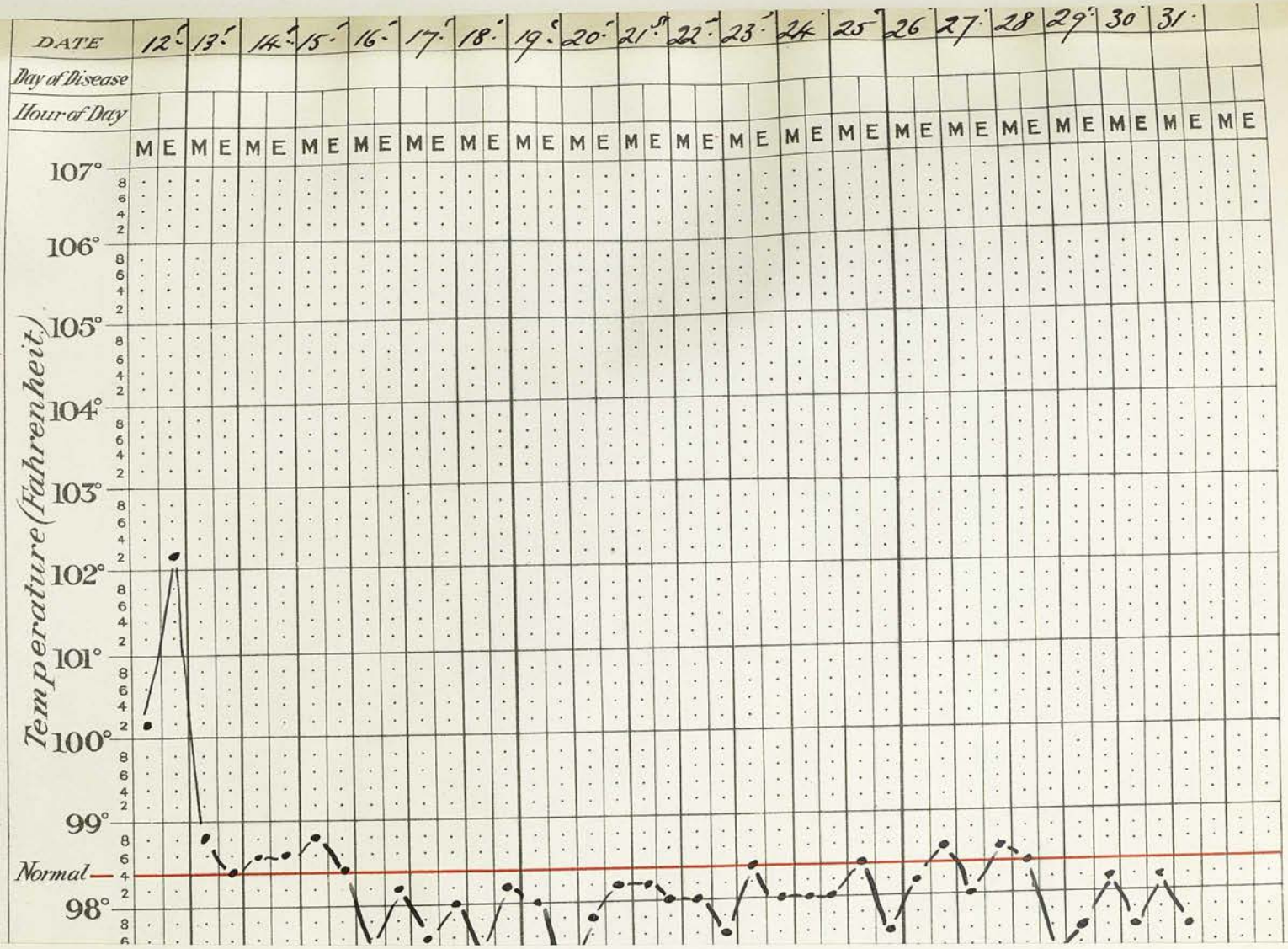
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 14.

C.A.B., Aged twenty-seven.
Ordinary telegraphist.
In training.

Date of admission to hospital: April 2nd 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of Disease: This was with shivering sensations, catarrh, slight sore throat and a dry cough.

Physical Examination on admission: The temperature was 100.6° F., the pulse rate 96 per minute and the respiratory rate 24 per minute. The throat was slightly injected but perfectly clean. There were a few inspiratory medium crepitations at the base of the left lung.

Clinical Course: On the third day of the disease medium crepitations were heard at both lung bases. On the fifth day the breath sounds were free from accompaniments at the right base, and the crepitations at the left base were coarse in character. The breath sounds were harsh vesicular in type at the left base. Two days later there was no abnormality in the physical signs. On this day, April 9th., a radiogram (Fig. 22 ) shewed a fairly extensive area of medium mottling at the left lung base. The remainder of the lung fields were clear apart from a few small calcified nodules of old disease in the left infra-clavicular zone.

There was so little constitutional disturbance that the man was fit enough to get up on the seventh

day of his disease. A slight cough persisted throughout the illness, but there was no sputum. On April 14th he was discharged home on ten days sick leave, being free from all symptoms except the slight cough. On April 30th a second radiogram (Fig. 23 ) shewed that the mottled opacities at the base of the left lung had now almost entirely disappeared. The patient was accordingly discharged to duty although his cough still persisted.

Treatment: An expectorant and diaphoretic mixture was given at first. Four hourly gargling was prescribed. On the third day sulphapyridine was given four hourly because of the signs of congestion at both lung bases; the drug was discontinued after four days. During the second week in hospital the syrup of the phosphate of iron was prescribed.

Result: This was entirely favourable. The patient was in hospital for twelve days. He was off duty for twenty-two days.

Complications: There were no complications.

Name

C. A. B.

No: 14

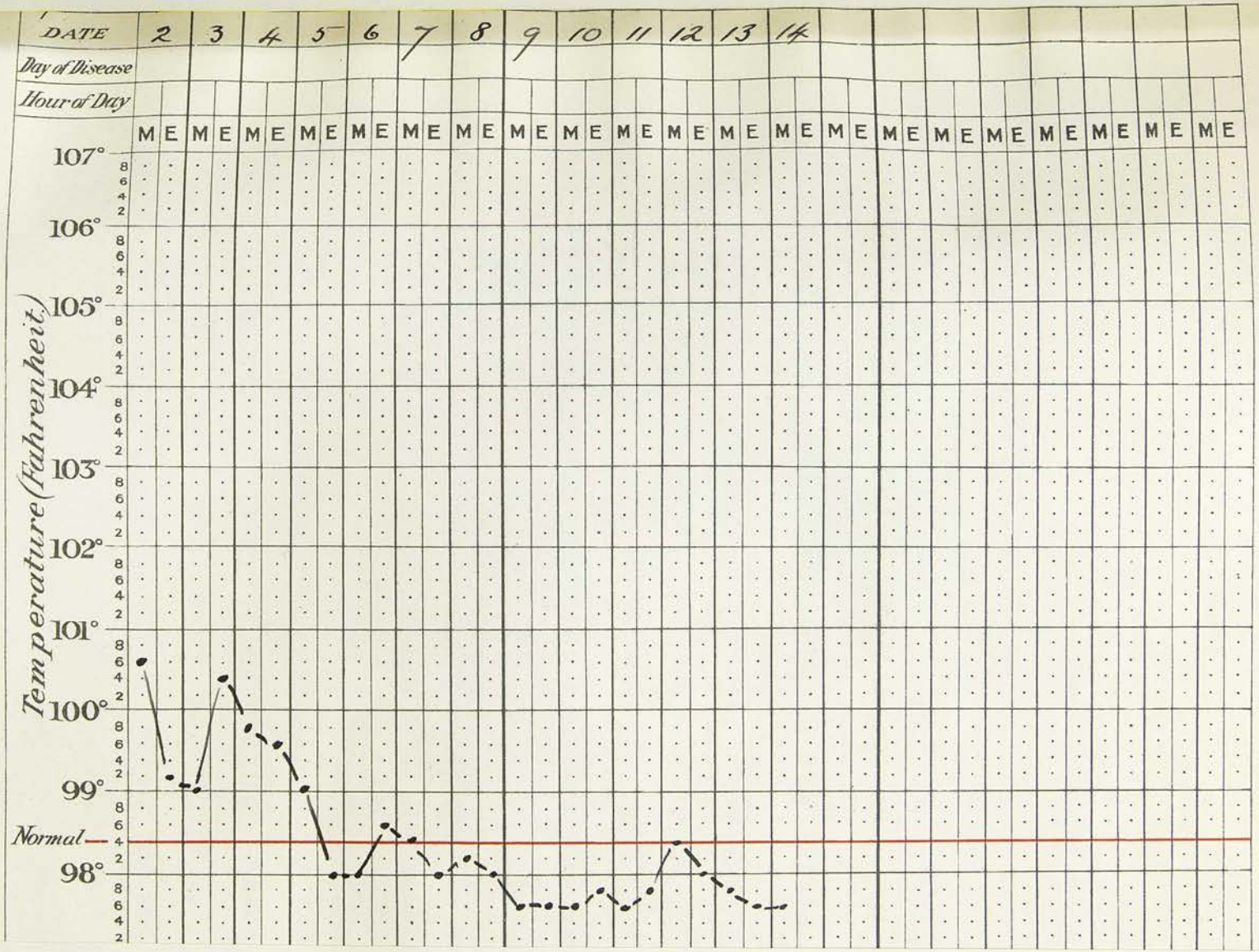
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 15.

H. T. Aged twenty-eight.
Ordinary telegraphist.
In training.

Date of admission to hospital: April 7th 1941.

Previous History: The patient had an attack of bronchitis in December 1941.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: The illness began with cough and pain at the praecordia on deep breathing.

Physical Examination on admission: The temperature, pulse rate and respiratory rate were all normal. A pleuritic rub and a few fine crepitations were audible over the anterior aspect of the base of the left lung. A radiogram (Fig. 24 ) on April 8th shewed a uniform opacity in the mid zone of the left lung field extending outwards from the hilum as far as the lung periphery.

Clinical Course: The course of the disease was entirely benign. The pleuritic rub was heard for some six days. Crepitations persisted at the left base until the tenth day, and thereafter the physical signs in the lungs were normal. There was never at any time abnormality of the percussion note over the lung. The breath sounds were always vesicular.

The patient developed a slight conjunctivitis in the left eye on the seventh day. This

quickly responded to local irrigations and healed in four days.

The man was first allowed up on the ninth day. On April 21st a second radiogram (Fig. 25 ) shewed almost complete resolution of the former disease. On the eighteenth day the man was discharged home on two weeks sick leave. On his return he went to duty feeling perfectly well, without any symptoms or signs of his recent disease.

Treatment: Antiphlogistine poultices were applied twice daily to the left chest for the first few days. Syrup of codeine phosphate was prescribed for the relief of the cough; this was later replaced by an expectorant mixture, although there was never any sputum. In the second week of the illness a tonic mixture containing strychnine was prescribed.

Result: This was satisfactory. The patient was in hospital for eighteen days, and was off duty thirty-two days.

Complications: There were no complications other than the initial pleurisy and an intercurrent conjunctivitis.

Name

H. T.

No: 15

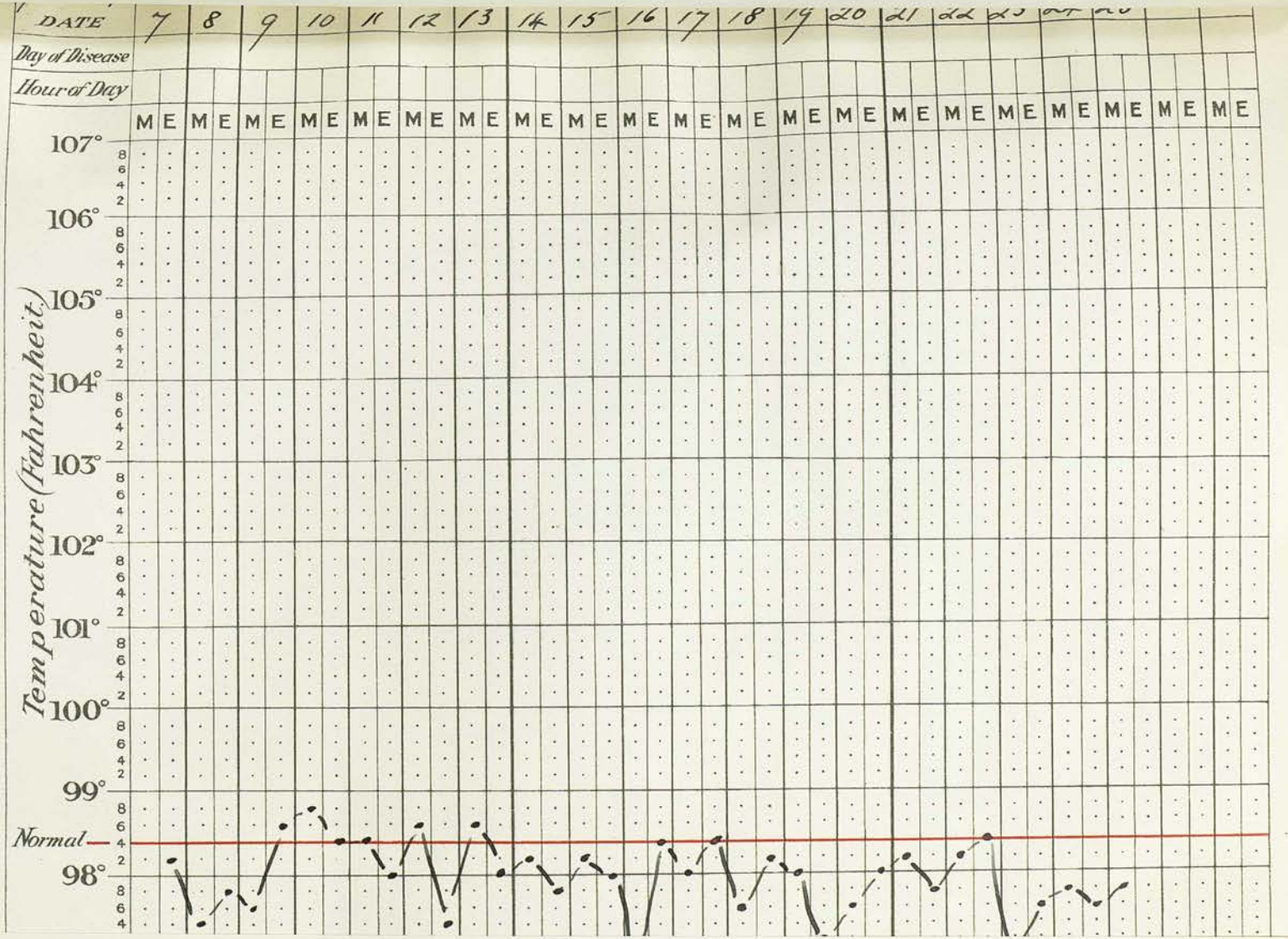
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 16.

H. S. Aged twenty
Ordinary Seaman.
From a trawler.

Date of admission to hospital : April 7th 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of Disease: The patient had complained of a "head cold" for one week prior to admission to hospital. He tried to continue at his work, but eventually found this impossible. On admission he was sweating fairly freely and he complained of pain in the region of the inferior angle of the right scapula on deep breathing. There was catarrh and cough with sputum.

Physical Examination on admission: The man looked ill when admitted. The temperature was 104° F., and the pulse rate 110 per minute. The respiratory rate was 28 per minute. For two days the bowels had not been opened. Cough was fairly frequent and there was a moderate amount of muco-purulent sputum. Medium crepitations and a few medium rhonci were audible in both upper lung zones and at the right base. The pharynx was injected.

Clinical Course: On the morning of the day following admission the patient was feeling much more comfortable. The temperature, pulse and respiratory rate had all returned to the normal level. A radiogram of the chest (Fig. 26 ) was taken. This shewed

a fairly dense uniform opacity in the upper portion of the mid zone of the right lung. The opacity extended outwards from the hilum as far as the lung periphery. At the lower limit of the shadow the thickened inter-lobar septum was clearly outlined. The remainder of the lung fields shewed an accentuation of the normal lung striations.

On the third day the patient began to complain of headache. The sputum on this day was blood-stained. On the next day the man began to vomit and complained of pain in the right hypochondrium. The vomiting was thought to be due to the administration of sulphapyridine and the drug was discontinued. There was now some dulness on percussion in the midzone of the right lung and bronchial breathing was heard here. The vomiting continued during the next few days and the patient was obviously becoming more ill.

On the seventh day frontal headache was severe. There was marked neck rigidity by this time. The abdominal reflexes were absent. The plantar reflexes were flexor, but Kernig's sign was a doubtful positive in both limbs. Examination of the optic fundi shewed loss of distinctness of the margins of the optic disks. Lumbar puncture was performed and 30 c.cm. of turbid fluid were removed. The fluid was under tension. The patient remained very ill, and complaining of severe headache, for a further five days. He developed a paralysis of the lateral rectus muscle of the left eye which gave rise to diplopia. On the eleventh day he

began to feel better. But he still suffered from severe head pains which kept him awake most of the night time. On the twelfth day a second lumbar puncture was performed. On this occasion 30 c.cm. of clear fluid were withdrawn. The fluid was still under considerable tension. The lumbar puncture did not relieve his headache.

On April 21st the man complained of pains in the small joints of the left hand, in the left wrist, in the right ankle and in the lumbar region. There was no pyrexia, and within a day or two the pains were less severe. The images of double vision were now approximating. There was an effusion of fluid into both knee joints, but the synovitis was only transient. By May 1st the man's condition was much improved. For some time he complained that his eyes were "feeling tired". On May 5th he was allowed up for the first time. Convalescence thereafter was slow but satisfactory. By May 19th there was no diplopia. After May 31st he was allowed to be up all day long. A radiogram (Fig. 27. ) on May 24th shewed normal lung fields. The former disease in the lungs had completely resolved.

On June 6th the patient was transferred to a Convalescent Home for one month. Thereafter he returned to duty.

Laboratory data: Repeated sputum tests for B.tuberculosis were negative.

On April 12th 30 c.cm. of turbid cerebro-spinal

fluid were removed by lumbar puncture. Direct examination of the fluid shewed a total cell count of 1,800 cells per c.mm. Lymphocytes were the predominating cells. The organisms were present on direct examination, and a culture of the fluid remained sterile after an incubation period of 24 hours. There was a moderate increse in globulin. The protein content was 110 mg. per 100 c.cm. Chlorides totalled 740 mg. per 100 c.cm. The sugar content was 46.4 mg. per 100 c.cm.

On April 19th 30 c.cm. of clear fluid were removed by lumbar puncture. The total cell count was 78 per c.cm. There was no increase in globulin. The protein content was 80 mg. per 100 c.cm. Chlorides totalled 731 mg. per 100 c.cm. The organisms were present in direct examination and the fluid again remained sterile on culture.

On May 26th the red blood cells totalled 5,600,000 per c.mm. The haemoglobin was 95 per cent of the normal.

Treatment: On admission an expectorant and diaphoretic mixture was given every four hours. Following the first lumbar puncture a diagnosis of acute polioencephalitis was made and hexamin gr. 10 was given thrice daily for ten days. With the onset of joint and muscle pains oil of wintergreen was applied locally to the affected parts, and sodium salicylate was given in 15 gr. doses thrice daily. In the convalescent stage Easton's syrup was prescribed.

Result: This was eventually satisfactory. The man was off duty for three and a half months.

Complications: The pneumonitis was complicated by acute polioencephalitis.

Name

H. S.

No: 16

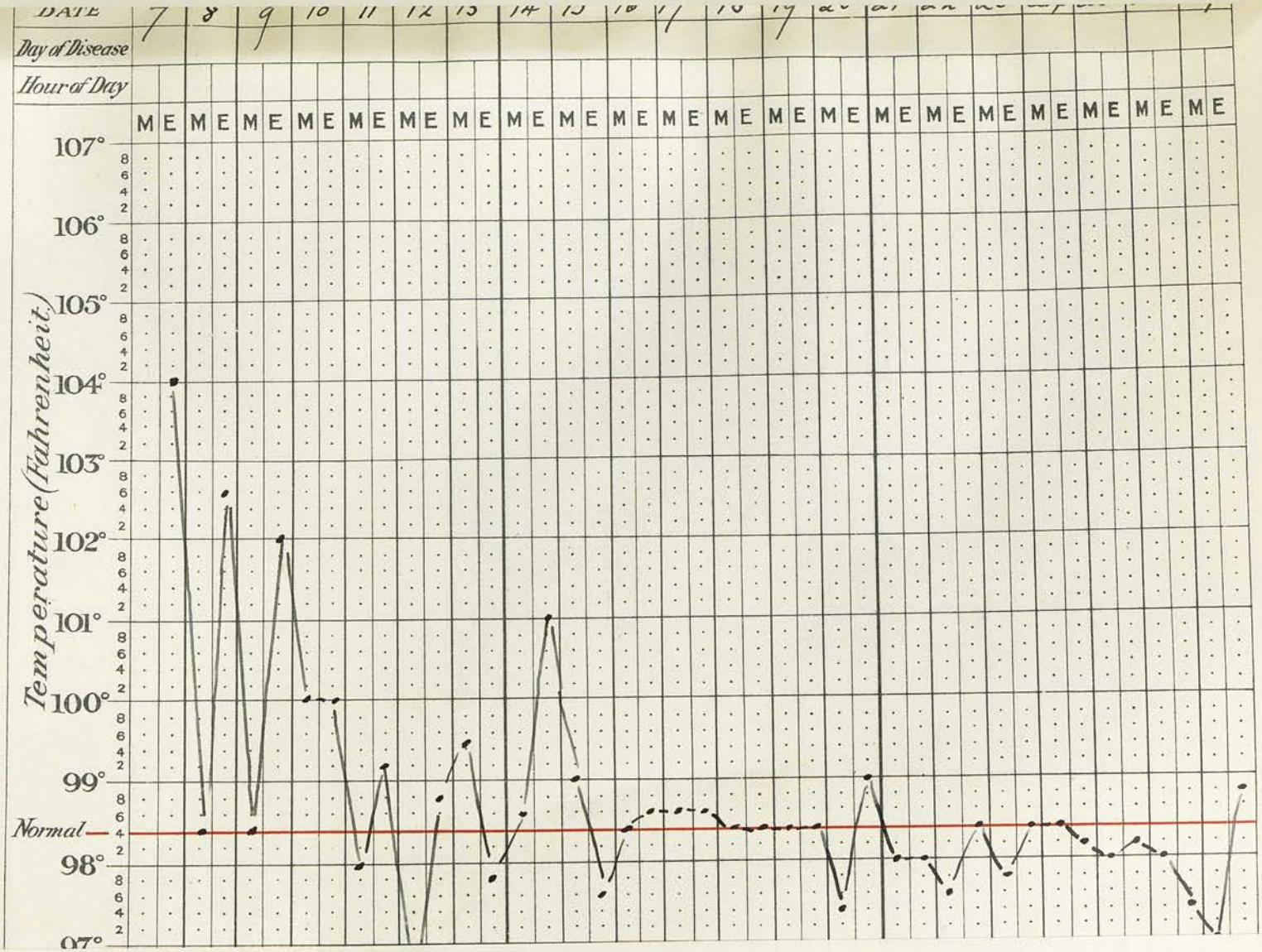
Occupation

Disease

Treatment

Discharged

Result & Notes



Name

H.S.

No: 16

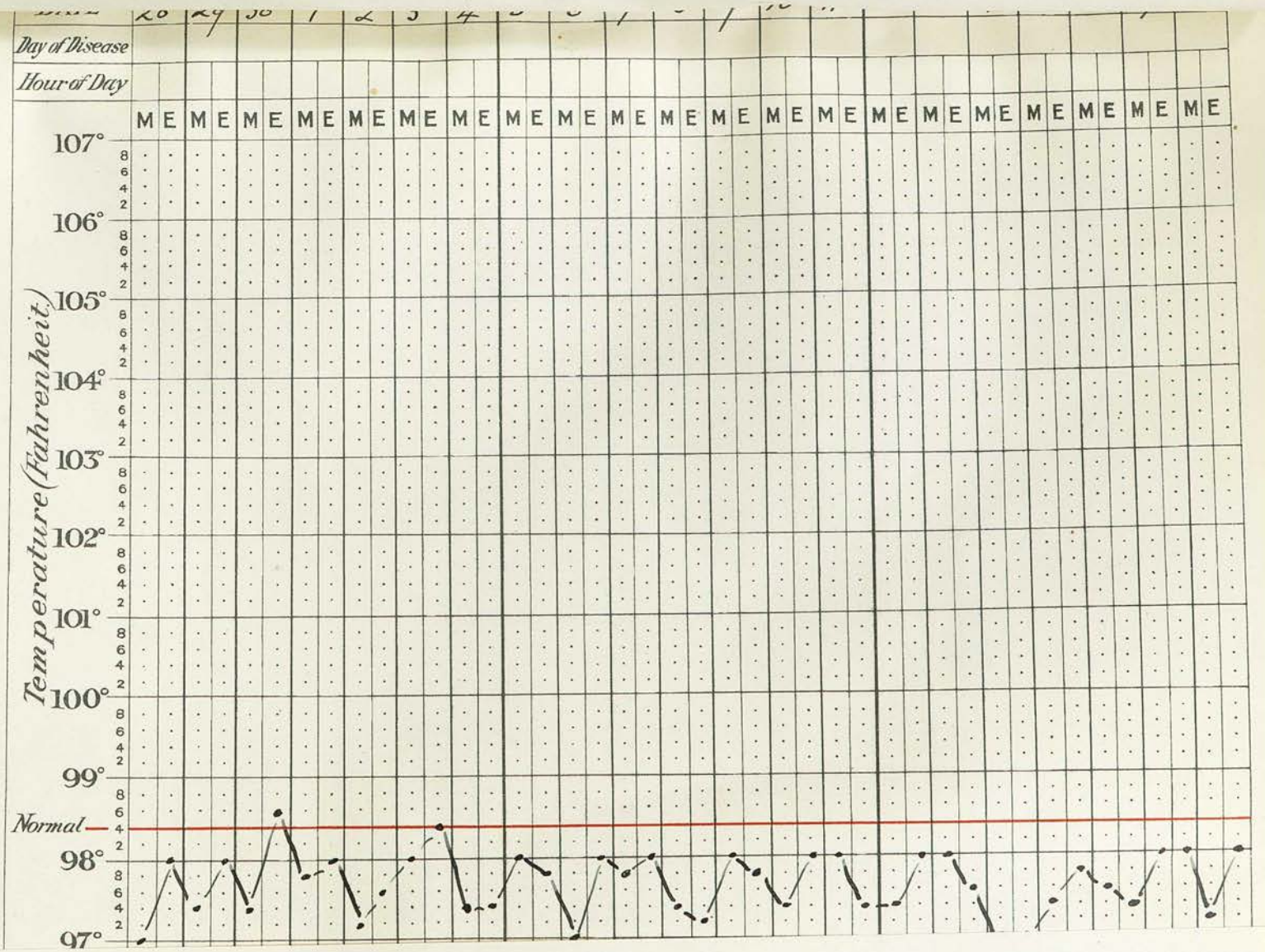
Occupation

Disease

Treatment

Discharged

Result & Notes



Name

H. S.

No: 16

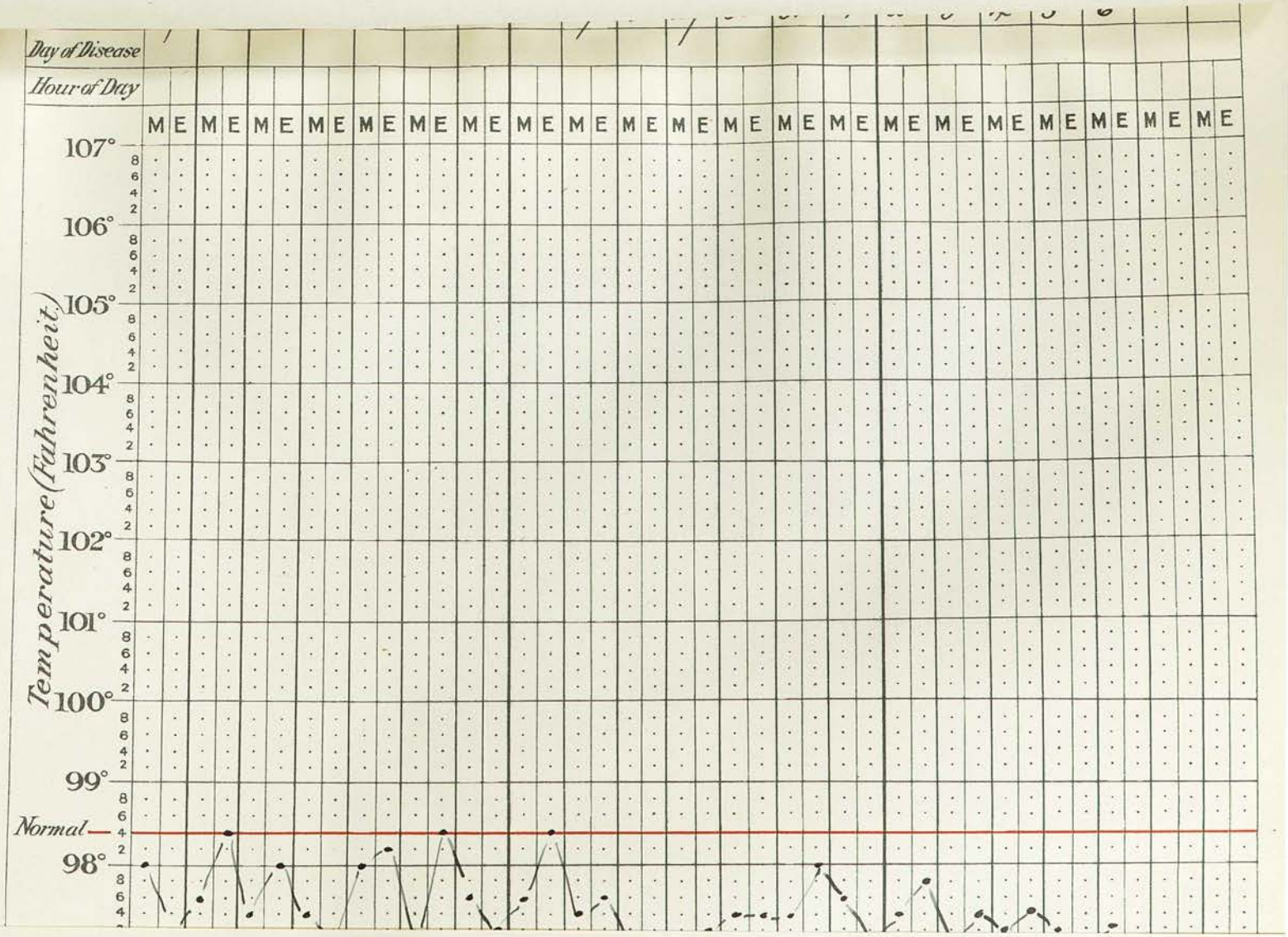
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 17.

Aged twenty-eight.

T.B.Q.
Ordinary telegraphist.
In training.

Date of admission to hospital: April 12th 1941.

Previous History: The patient had an attack of tonsillitis in January 1941.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: This was with a feeling of malaise for four days before admission. The man had been inoculated with Typhoid Group Vaccine and Tetanus Toxoid (Combined) on the day before admission. At the time of admission he complained of sore throat, of slight dry cough and a shivering attack.

Physical Examination on admission: The temperature was 104.2°F., and the pulse rate 112 per minute. The respiratory rate was normal. Both tonsils were injected and enlarged, but clean. The pharynx was injected. There was no coryza. In the chest there were no abnormal physical signs and it was presumed that the cough was due to a tracheitis.

Clinical Course: The patient vomited on the night of his admission. On the following morning he complained of feeling faint. On the third day he complained of pain across the front of the chest on coughing. Vomiting continued and there was insomnia. On the fourth day of the disease there were no abnormal

signs beyond post-nasal catarrh. The temperature remained raised and of the continued type. The patient was nursed as a strict bed case in the open air on the verandah of the ward, but he did not appear to be very ill; the respiratory rate did not exceed 20 per minute and the pulse rate varied between 84 and 110 per minute. At no time were there any abnormal signs in the lungs. By the ninth day the man looked and felt better, and the temperature had returned to normal.

A radiogram (Fig. 28 ) on April 21st shewed an area of fine woolly mottling in the right infra-clavicular zone. The remainder of the lung fields were clear. On the twelfth day the patient was allowed up for the first time. Although the pyrexia had for eight days been of the continued type exactly as occurs in lobar pneumonia, the clinical picture had in no way resemlbed that of acute primary pneumonia. There was no respiratory distress and little increase in the pulse rate above the normal level. On the fourteenth day the man was discharged home on five days sick leave. He felt perfectly fit on his return and was therefore discharged to duty.

On May 13th he reported for a second radiogram (Fig. 29 ). This shewed completely normal lung fields.

Treatment: Gargles were prescribed for the treatment of the pharyngitis. An expectorant mixture was given to alleviate cough. By way of a diaphoretic Empirin was prescribed. To relieve the

catarrh inhalations of Friar's Balsam were ordered. During convalescence the syrup of the phosphate of iron was taken.

Result: This was satisfactory. The duration of stay in hospital was a fortnight. The patient was off duty for nineteen days.

Complications: There were no complications.

April 1941

Name

T. B. Q.

No : 17

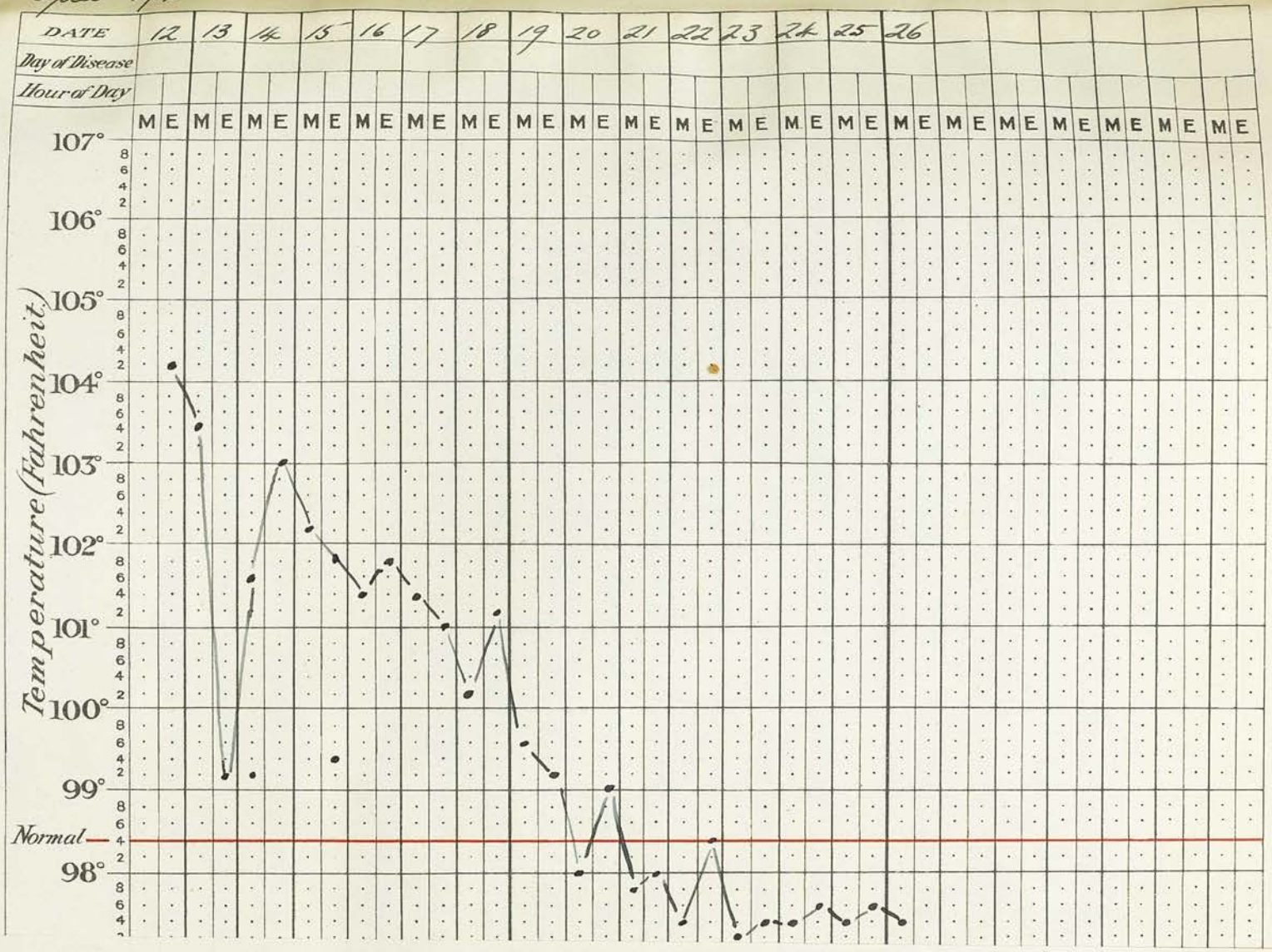
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 18.

W.E.A. Aged twenty-five.
Ordinary seaman.
In training.

Date of admission to hospital: April 13th 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of Disease: Prior to admission the patient had been unwell for two days with the symptoms of a common cold.

Physical Examination on admission: The temperature was 101°F., and the pulse rate 84 per minute. The respiratory rate was normal and the physical signs in the chest were normal in every respect. There was a slight cough with a very little mucoid sputum, and some catarrh. The naso-pharynx was healthy.

Clinical Course:- A troublesome cough with sputum persisted for some days, but the patient was otherwise comfortable. A radiogram (Fig. 30 ) on April 18th shewed a fairly dense uniform opacity in the centre of the lower zone of the left lung. The remainder of the lung fields were clear. There were no abnormal signs in the chest at any time during the illness.

The man was first allowed up on the fourteenth day He was now well apart from a slight cough. He was discharged home on two weeks sick leave on May 5th. On his return he was still complaining of a slight cough with sputum, but otherwise he felt perfectly

well and ready for duty. A second radiogram (Fig. 31 ) on May 20th shewed that the lung fields were now clear except for a very small area of faint mottling at the site of the former opacity. The man returned to duty on May 21st.

Laboratory data: Sputum tests for the presence of B.tuberculosis were negative.

Treatment: A diaphoretic and expectorant mixture was administered every four hours for ten days. Thereafter a teaspoonful dose of squills linctus was given when the cough was troublesome.

Result: This was satisfactory. The patient was in hospital for twenty-two days and off duty for thirty-eight days.

Complications: There were no complications.

well and ready for duty. A second radiogram (Fig. 31 ) on May 20th shewed that the lung fields were now clear except for a very small area of faint mottling at the site of the former opacity. The man returned to duty on May 21st.

Laboratory data: Sputum tests for the presence of B.tuberculosis were negative.

Treatment: A diaphoretic and expectorant mixture was administered every four hours for ten days. Thereafter a teaspoonful dose of squills linctus was given when the cough was troublesome.

Result: This was satisfactory. The patient was in hospital for twenty-two days and off duty for thirty-eight days.

Complications: There were no complications.

Name

W. E. A.

No: 18

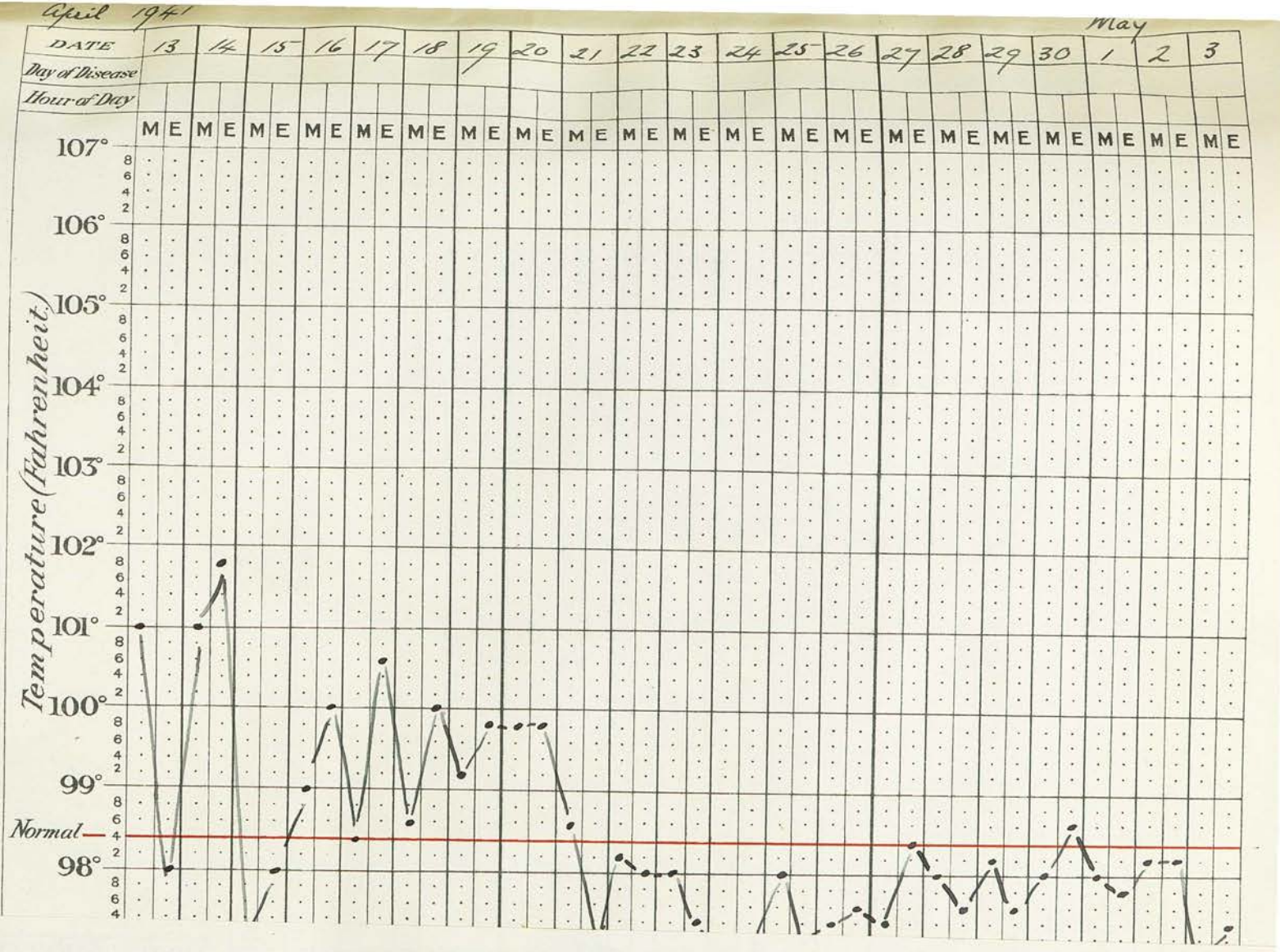
Occupation

Disease

Treatment

Discharged

Result & Notes



Name

W. E. A.

No: 18

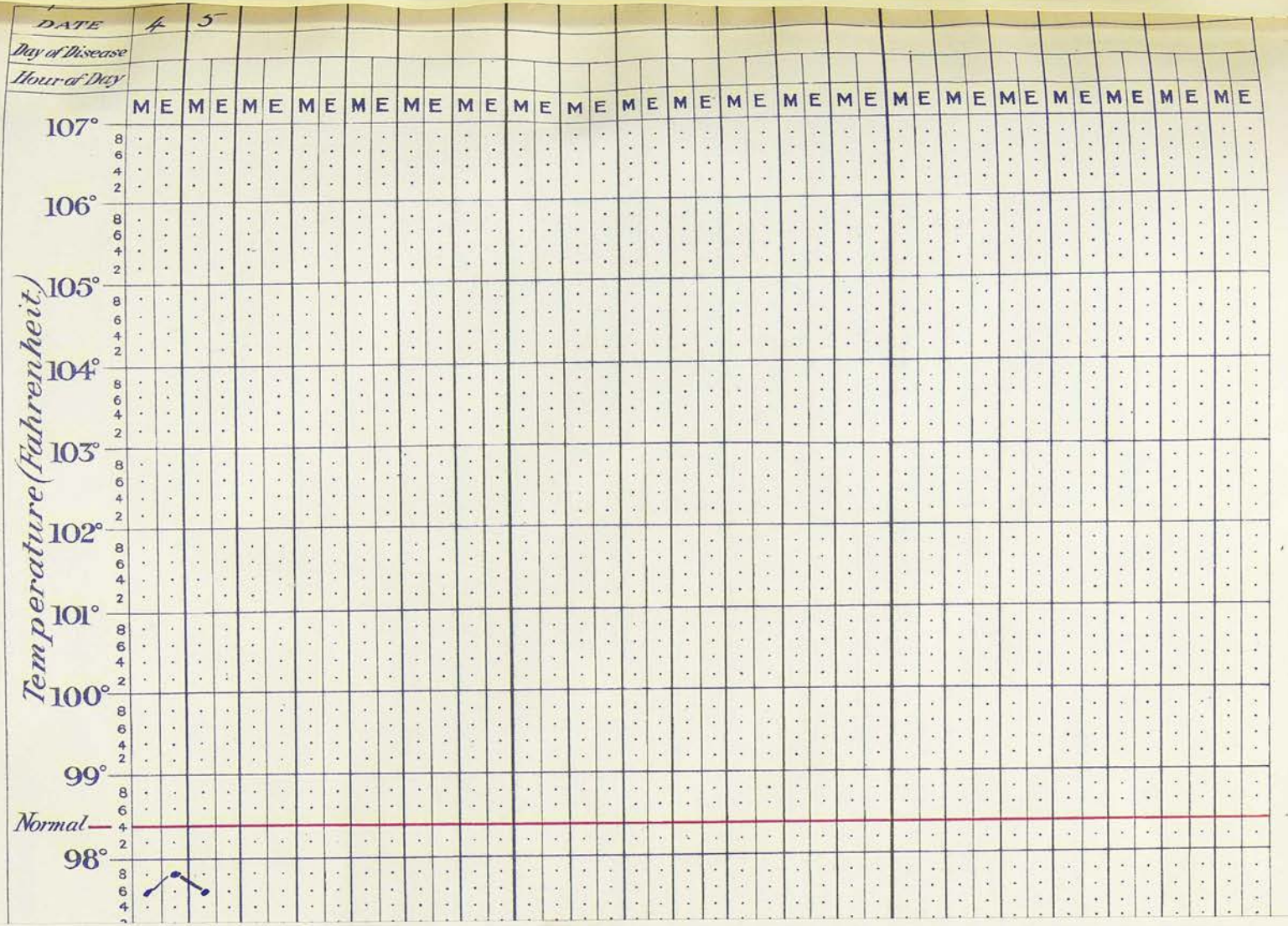
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 19.

D. T. Aged twenty-eight.
Ordinary seaman.
In training.

Date of admission to hospital: April 23rd 1941.

Previous History: The patient had an attack of catarrhal jaundice during adolescence.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: This was with catarrhal symptoms, namely coryza and cough.

Physical Examination on admission: The temperature was 100.4° F., and the pulse rate 86 per minute. There were no other abnormal physical signs.

Clinical Course: The early course of the disease was marked by vomiting, generalised muscle pains, headache, sweating, dry cough and pain at the right lower costal margin. At first there were no abnormal physical signs in the lungs.

Blood-stained sputum was produced on the fifth day. On the sixth day the breath sounds were harsh vesicular in the upper zones of both lungs and a few rhonci were audible at both apices. A radiogram (Fig. 32 ) on this day shewed a uniform opacity in the mid zone of the right lung extending outwards from the hilum to as far as the periphery of the lung. The elevated inter-lober septum gave a regular upper margin to the shadow. There was "puckering"of the right diaphragm. The remainder of the lung fields were clear. On May 1st the breath sounds were

diminished in the lower half of the right lung. The sputum was now more copious, mucopurulent in character and still blood-stained. Some pain was still present in the right side. But the man did not feel ill and did not look ill; the temperature, pulse and respiratory rates were normal.

On May 4th the patient was allowed up for the first time. By the twenty-first day of his illness he had regained much of his former strength, but he complained of a recurrence of the pain in the side; he described this as a "bruized feeling." The physical signs had now returned to normal. A second radiogram (Fig. 33 ) on May 15th shewed that the former opacity had almost completely disappeared. The inter-lobar septum was just discernible as a faint line. On May 19th the man was discharged home on two weeks sick leave. He felt well on his return from leave, but still complained of slight catarrh and a dry cough. He was discharged to duty.

Laboratory Data: Sputum tests for the presence of B.tuberculosis were negative.

Direct examination of the sputum revealed very scanty streptococci.

The total leucocyte count on May 3rd was 9,200 per c.mm., with a differential count of 48 per cent polymorphonuclears, 50 per cent lymphocytes, 2 per cent mononuclears.

The red blood cell count was 4,100,000 per c.mm.

The haemoglobin was 75 per cent of the normal.

A tuberculin patch test was negative for both the human and bovine forms.

Treatment: Aspirin and potassium chloride gargles were administered in the early stages. An expectorant cough mixture was prescribed whilst the cough was troublesome. Sulphapyridine was given for two days at first, but was then discontinued because of toxic vomiting. During convalescence cod liver oil and malt was given. For the anaemia iron and ammonium citrate gr. 30 was prescribed three times a day.

Result: This was satisfactory. The duration of stay in hospital was twenty-six days. The man was off duty for six weeks.

Complications: There were no complications. The anaemia was present at the time of admission to hospital.

Name

D. T.

No: 19

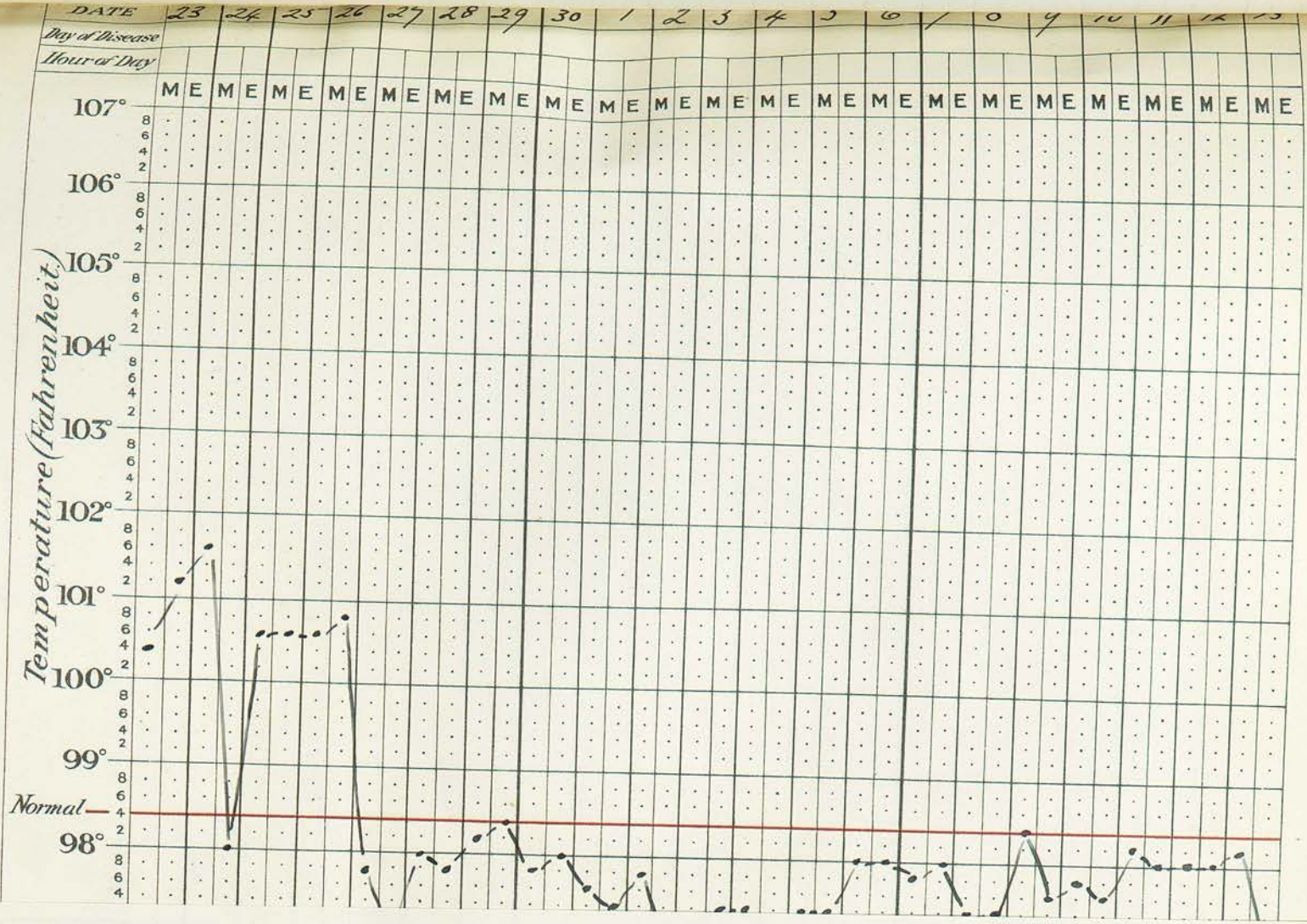
Occupation

Disease

Treatment

Discharged

Result & Notes



Name

J. T.

No: 19

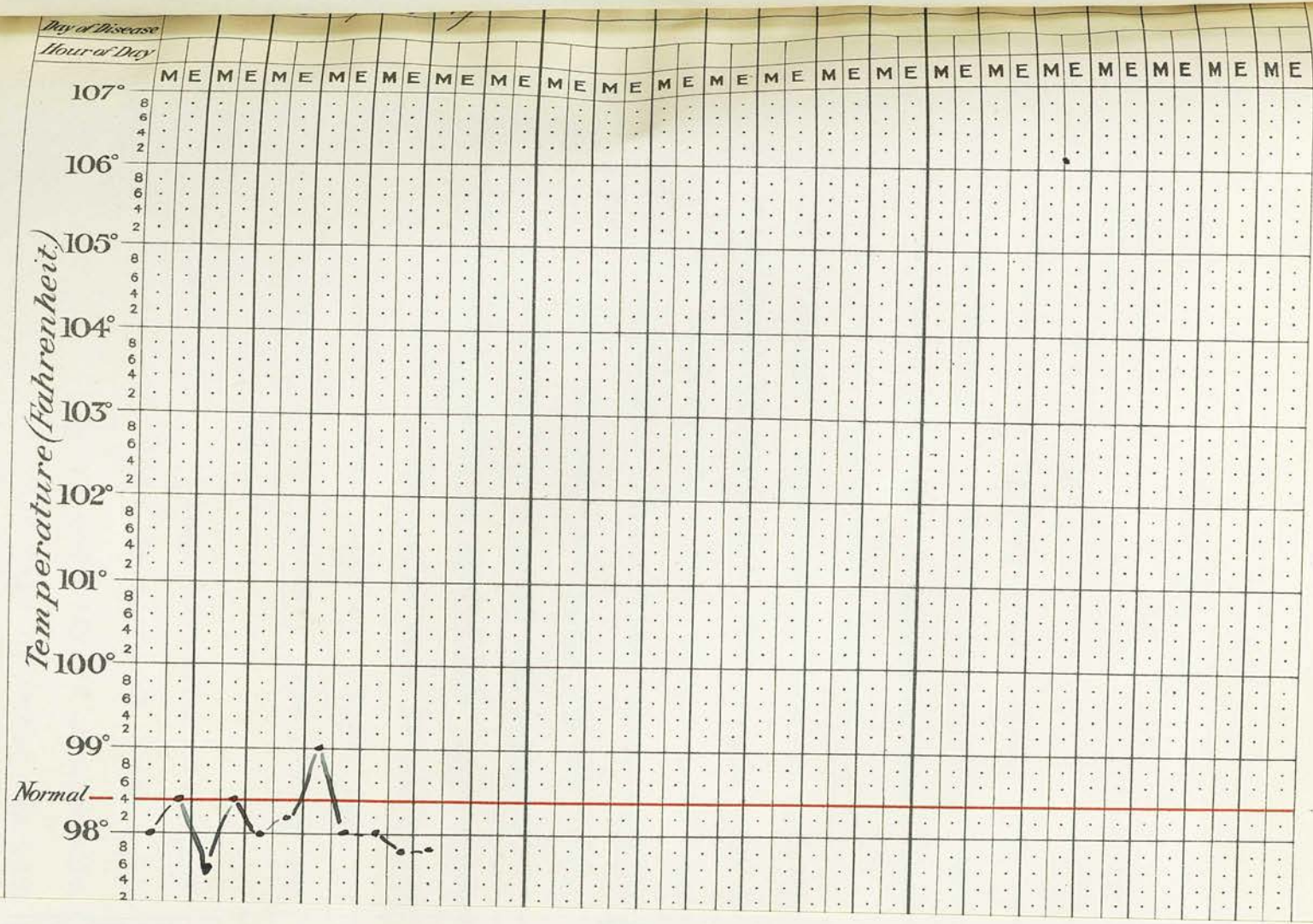
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 20.

H.J.G. Aged nineteen.
Wireman.
From a destroyer.

Date of admission to hospital: April 25th 1941.

Previous History: The patient had an attack of influenza and tonsillitis seven weeks before the onset of this present illness.

Family History: There was nothing of note in this.

Mode of Onset of Disease: The man was sick on board his ship for five days before being transferred to hospital. The illness began with sore throat, headache and pains in the limbs. This was followed by a cough and sweating.

Physical Examination on admission: The temperature was 101° F., the pulse rate 82 and the respiratory rate 22 per minute. There were no abnormal signs in the chest. The fauces were clean and not injected.

Clinical Course: Cough persisted throughout the whole of the time spent in hospital. It was accompanied by only a small quantity of muco-purulent sputum. For the first few days headache was persistent. A radiogram (Fig. 34. ) on April 29th shewed a small area of coarse mottling at the base of the left lung, extending outwards and downwards from the hilum and obscuring the line of the left diaphragm. The obliteration of the line of the diaphragm and of the costo-diaphragmatic angle suggested a small collection of fluid. The remainder of the lung fields were

clear. As yet there were no abnormal signs in the chest. The cough now was troublesome only first thing in a morning and last thing at night, when there was some pain across the front of the chest on coughing.

From time to time the youth suffered from slight attacks of nose-bleeding. He was also suffering from cheiro-pompholyx of the fingers. On the ninth day he was allowed to get up. On the eleventh day he noticed itching of the arms, abdomen, thighs and ankles. No acarus burrows were to be seen, but the routine sulphur treatment for scabies was prescribed and quickly allayed the itching. The man was slow in regaining his strength and suffered from sweating at night time throughout the whole of his period of stay in hospital.

On the twentieth day of the illness a few medium crepitations were heard at the base of the left lung. This was the first time that abnormal physical signs were detected. On this day, May 14th, a second radiogram (Fig. 35 ) shewed no sign of disease in the lungs. The left costo-diaphragmatic angle was now normally outlined. By the twenty-fifth day the crepitations were no longer audible. On May 22nd the patient was discharged home on two weeks sick leave. On his return he still complained of a slight cough and of occasional weakness in the legs. The physical signs in the chest, were normal and a third radiogram (Fig. 36 ) shewed normal lung fields. The youth was discharged to duty on June 8th.

Laboratory data: Direct examination of the sputum revealed K. pneumococci as the predominant organisms. Repeated sputum tests for B. tuberculosis were negative.

On May 2nd the total leucocyte count was 8,400 per c.mm., with a differential count of 43 per cent neutrophil polymorphonuclears, 52 per cent. lymphocytes, 4 per cent. eosinophils and 1 per cent. mononuclears.

Treatment: At first an expectorant and diaphoretic mixture was given four hourly. Cod liver oil and malt was prescribed throughout the illness.

Result: This was satisfactory. The duration of stay in hospital was four weeks. The youth was off duty for six weeks.

Complications: There were no complications other than the small pleural effusion.

April 1941. May

Name

H. J. G.

No: 20

Occupation

Disease

Treatment

Discharged

Result & Notes

DATE 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Day of Disease

Hour of Day

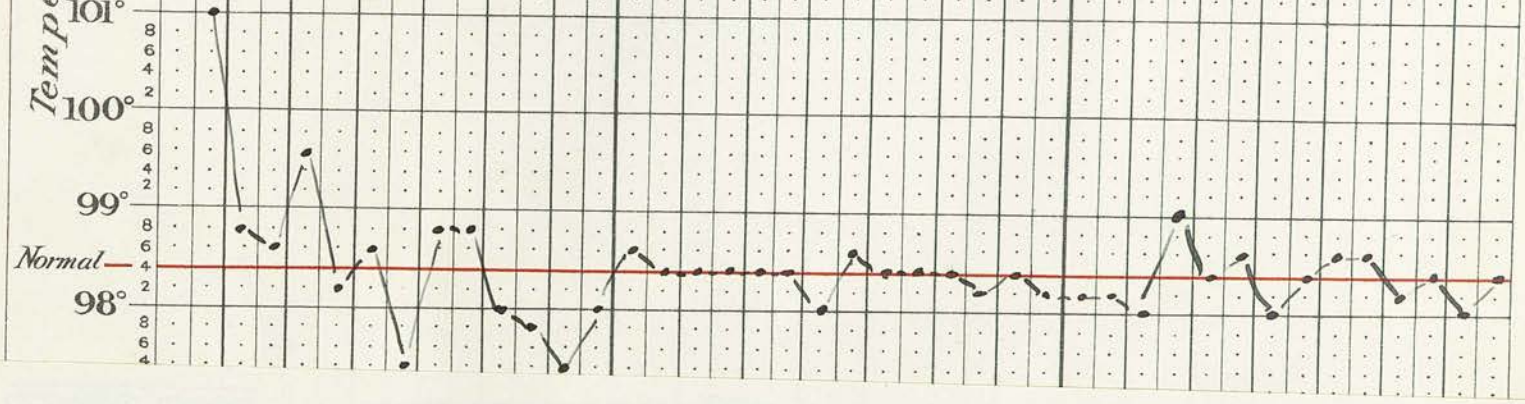
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E

Temperature (Fahrenheit)

107° 106° 105° 104° 103° 102° 101° 100° 99° 98°

8 6 4 2

Normal



Name

H. J. G.

No: 20.

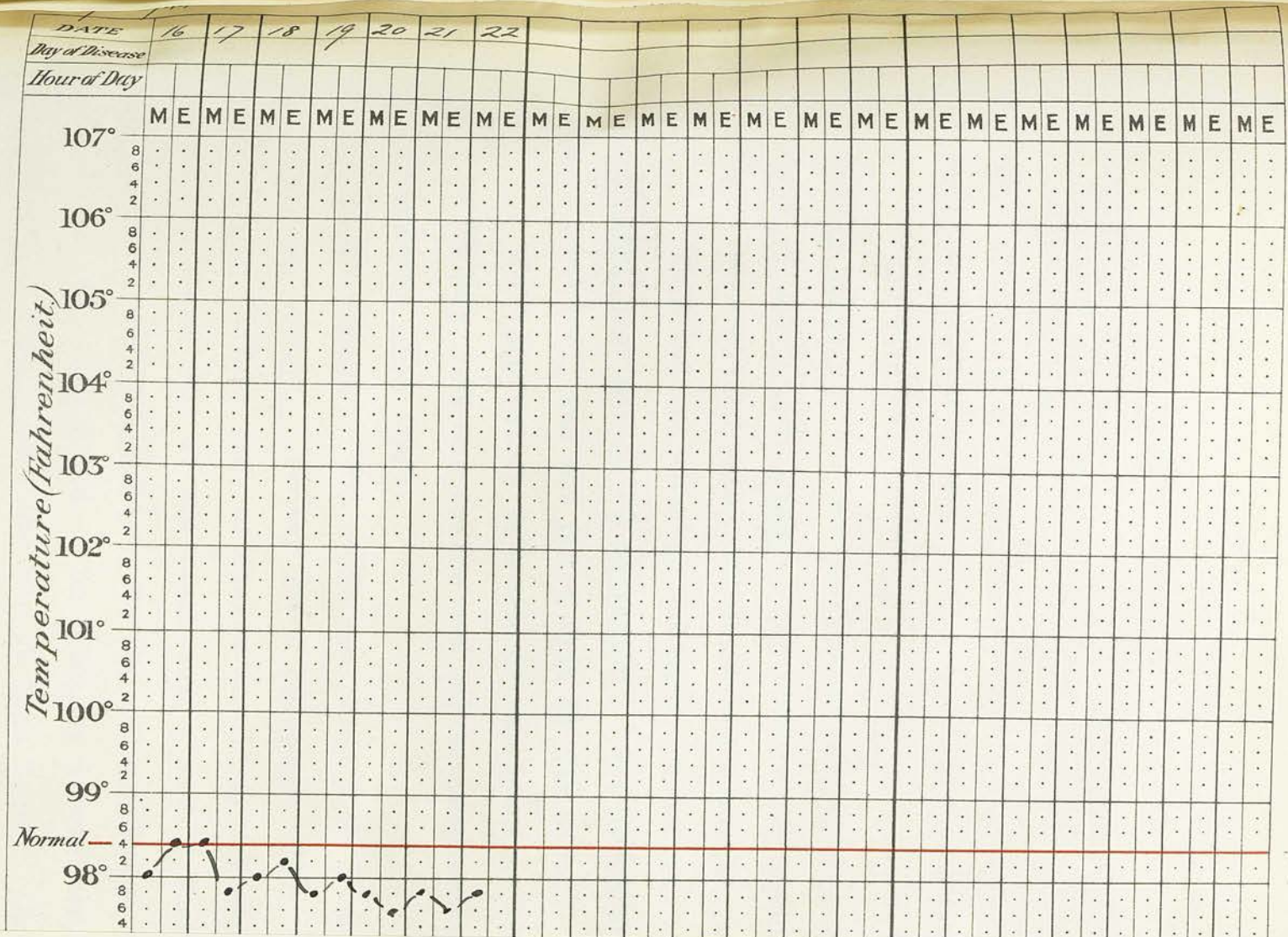
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 21.

K.G.G. Aged twenty-eight.
Ordinary signalman.
In training.

Date of admission to hospital: April 26th 1941.

Previous History : The patient suffered from pleurisy and pneumonia in 1932.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: The illness began with generalised aches and pains and a slight cough. This was followed by headache and nausea.

Physical Examination on admission: The temperature was 100.6° F., and the pulse rate 84 per minute.

The respiratory rate was 22 per minute. There were fairly numerous coarse and medium crepitations throughout both lungs.

Clinical Course: The cough was productive of muco-purulent sputum. On May 3rd a radiogram (Fig. 37 ) shewed a diffuse area of coarse and irregular mottling in the lower half of the right lung field. There was some direct mottling in the mid and lower zones of the left lung field. On this day coarse crepitations and rhonci were audible at both bases. On the next day the patient asked to get up and was allowed up for a short time.

On the fourteenth day the man complained of a dull ache, "like a bruize", at the base of the right lung. He was slow to regain his strength. On May 14th there was a return of slight catarrh and sweating, but there was no pyrexia and the physical signs

in the lungs were normal. A second radiogram on May 15th (Fig. 38 ) shewed that both lung fields were now almost completely clear. There were prominent vascular markings in both lung roots.

On May 19th the patient was discharged home on two weeks sick leave. On his return he still complained of slight cough and sputum, but otherwise felt well. The physical signs in the lungs being normal, the man was discharged to duty on June 4th.

Laboratory data: Direct examination of the sputum shewed K. pneumococci as the predominant organisms. No B. tuberculosis were present.

The tuberculin patch test was negative for both human and bovine forms.

On May 6th the total leucocyte count was 7,400 per c.mm., with a differential count of 53 per cent. neutrophil polymorphonuclears, 37 per cent. lymphocytes, 5 per cent. eosinophils, 1 per cent. mononuclears and 4 per cent. myelocytes.

Treatment: At first an expectorant mixture and sulphapyridine 1.0 g. were given every four hours. The sulphapyridine gave rise to vomiting, and as it did not appear to have any therapeutic effect it was omitted after four days. After the first week cod liver oil and malt was given throughout the illness.

Result: This was satisfactory. The patient was in hospital for twenty-two days. He was off duty for five and a half weeks.

Complications: There were no complications.

Name

K.G.G.

No: 21

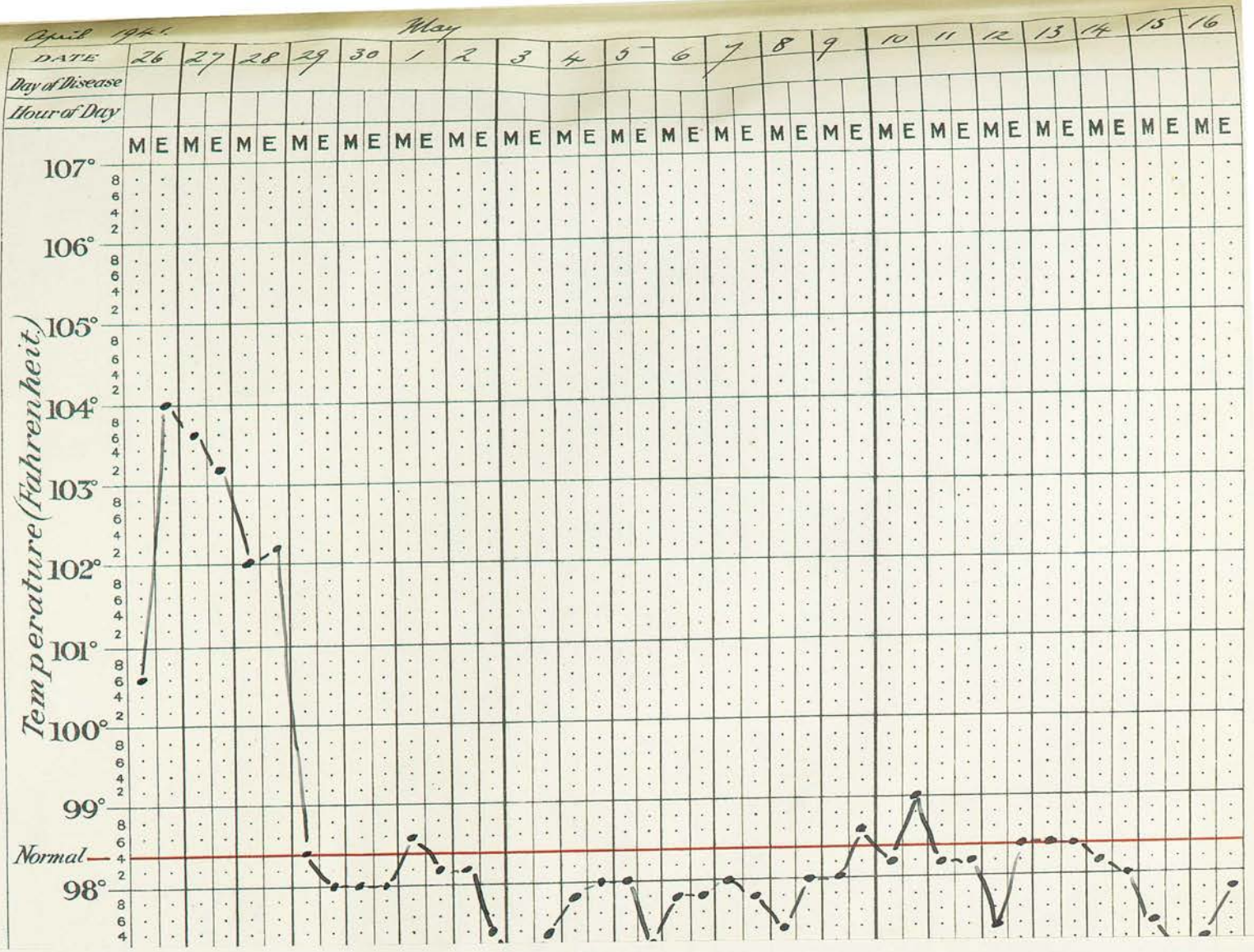
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 22.

F.G.W. Aged twenty-seven.
Lieutenant R.N.
From a destroyer.

Date of admission to hospital: May 21st 1941.

Previous History: This officer suffered from subacute rheumatism at the age of 12. In 1938 he suffered from what he understood to have been an attack of dengue. During the winter of 1940-41 he had a recurrence of what he described as pains "like growing pains".

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: The patient was unwell for four days on board his ship before being admitted to hospital. The illness began with headache, a feeling of malaise, constipation and cough. This was followed by a dull ache in the lower part of the chest at the back.

Physical Examination on admission: The temperature was 101.8° F., and the pulse rate 98 per minute. The respiratory rate was 22 per minute. There was no impairment of thoracic movements. At the right lung base there was some dulness on percussion, together with some diminution of breath sounds and diminished resonance. At both bases there were a very few rhonci and medium crepitations. A radiogram (Fig. 39. ) taken at the time of admission shewed a fairly extensive area of coarse mottling in the base of the

right lung. The mottling extended outwards from the hilum to the periphery. In the lower part of the mid zone of the left lung there was an area of finer mottling. The remainder of the lung fields were clear.

Clinical Course: At first the cough was troublesome both day and night, and was productive of a moderate amount of thick yellow mucopurulent sputum. The pain at the lung bases was absent after two days. On the seventh day the man was allowed to get up. He felt and looked fit enough to be up and there was no reactionary rise of temperature or pulse rate after being up. By the ninth day there were no abnormal physical signs in the chest and on the tenth day the man was discharged home on two weeks sick leave. At the end of his period of sick leave he was re-examined at the Admiralty, and pronounced fit for duty.

Laboratory data: Direct examination of the sputum on the day of entry shewed the presence of a few Gram positive cocci only. There were no B. tuberculosis in the sputum.

The total leucocyte count was 6.800 per c. mm., with a differential count of 57 per cent. neutrophil polymorphonuclears, 43 per cent. lymphocytes, 5 per cent. eosinophils and 1 per cent. mononuclears.

Treatment: At the commencement of treatment an expectorant and diaphoretic mixture was given every four hours. The expectorant mixture was contin-

ued throughout the period of stay in hospital.

Result: This was satisfactory. The period of stay in hospital was ten days. The man was off duty for twenty-four days.

Complications: There were no complications.

* Unfortunately the radiogram taken at the Admiralty was not available for use.

Name

F.G.W.

No: 22

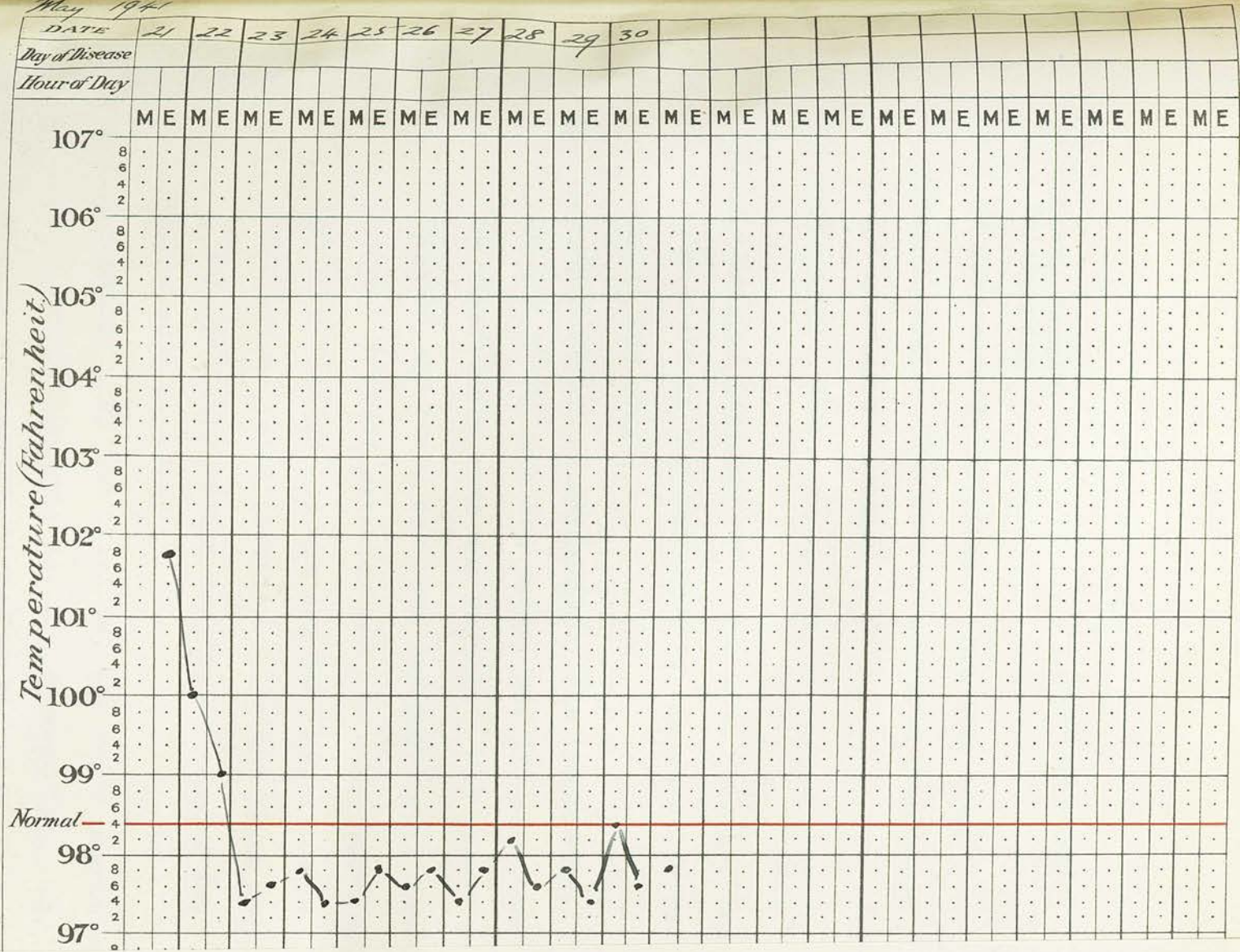
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 23.

R. A. Aged nineteen.
Ordinary Seaman.
In training.

Date of admission to hospital: May 25th 1941.

Previous History: The patient suffered from mumps and measles in infancy.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: This was with malaise, headache, pain in the left side of the chest, sore throat and cough.

Physical Examination on admission: The temperature was 102.2° F., and the pulse rate 120 per minute. The respiratory rate was normal. The throat was inflamed and there was some nasopharyngeal discharge. Profuse sweating was present. Four days before admission the man had been vaciñated but there was no local reaction. In the lower half of the left lung medium crepitations and a few rhonci were audible.

Clinical Course: By the third day the man's condition was much improved. On this day a radiogram (Fig. 40. ) shewed an area of coarse mottling in the left lower lung field. The remainder of the lung fields were clear.

After the third day there was no discomfort beyond a cough with a small amount of mucopurulent sputum. On the tenth day the man was allowed up for the first time. There were now no abnormal physical signs in the lungs and there was no more sweating. On June

7th the patient was discharged home on one week's sick leave. On his return he was free from complaints, but there were a very few post-tussive rhonci in the lower zone of the left lung. A second radiogram (Fig. 41. ) on June 14th shewed normal lung fields. On June 17th the man was discharged to duty.

Laboratory data: Direct examination of the sputum shewed numerous pneumococci and tetracocci, some streptococci and a few Friedlander's bacilli. There were no B. tuberculosis.

The total leucocyte count on May 26th was 9,200 per c. mm. with a differential count of 62 per cent. neutrophil polymorphonuclears, 32 per cent. lymphocytes, 2 per cent. eosinophils and 4 per cent. mononuclears.

Treatment: The patient was given gargles and a diaphoretic and expectorant mixture every four hours during the first week. During the second week the expectorant mixture was continued and cod liver oil and malt was given in addition.

Result: This was satisfactory. The duration of stay in hospital was thirteen days. The man was off duty for twenty-three days.

Complications: There were no complications.

Name

K. A.

No: 23

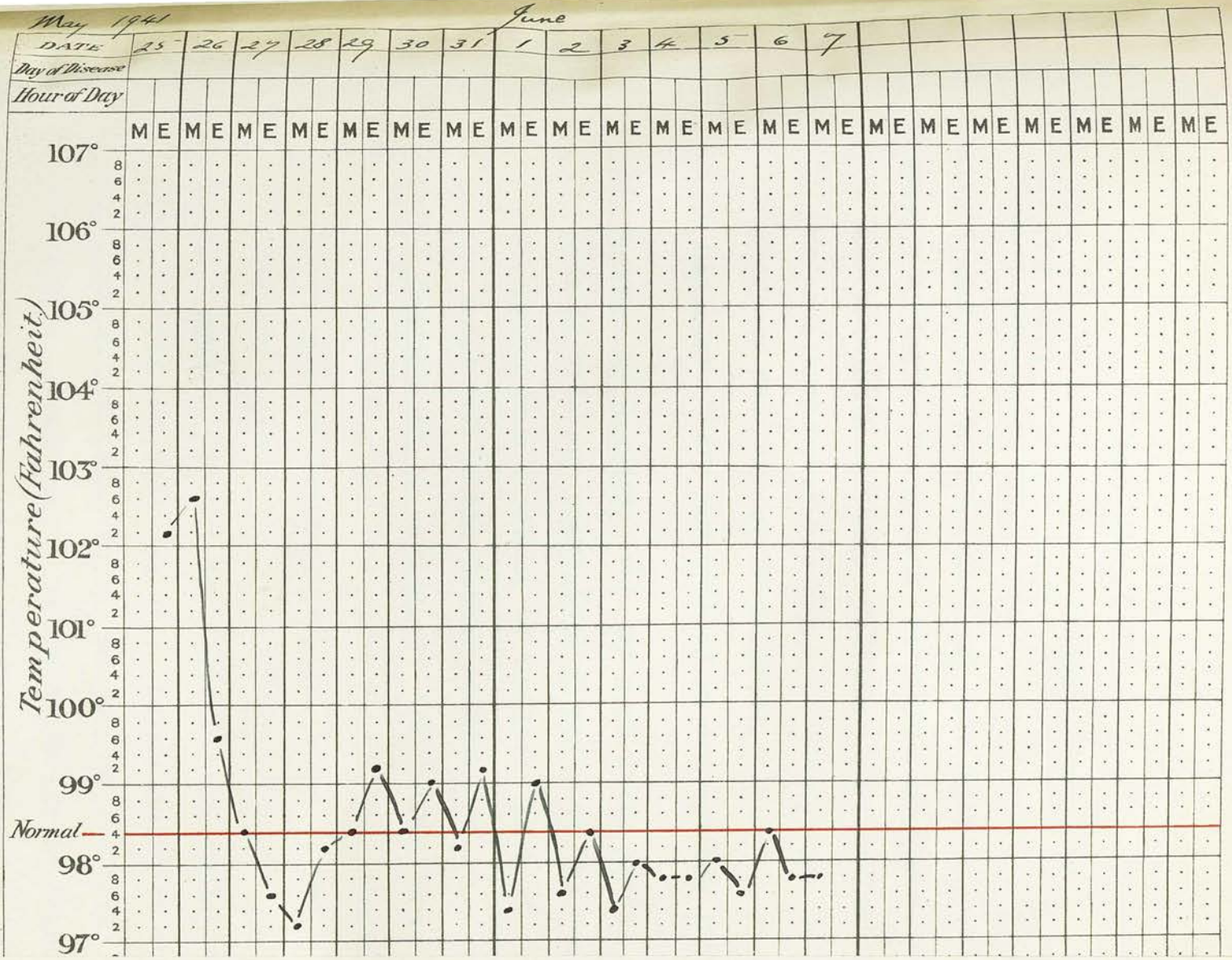
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 24.

P. B. Aged twenty-six.
Leading cook.
From a trawler.

Date of admission to hospital: May 30th 1941.

Previous History: The patient suffered from pleurisy and pneumonia in 1933. Following this he had had two attacks of bronchitis. Every year he suffered from two or three colds.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: For two days prior to admission this man complained of pains in the back. The pains were situated in the lower part of the chest and in the lumbar muscles.

Physical Examination on admission: The temperature was 100.8° F., and the pulse rate 88 per minute. There were no abnormal physical signs in the chest or throat.

Clinical Course: On the day following his admission to hospital the man felt better. He continued to complain of aches and pains in the muscles of the back and across the shoulders. On the fifth day he began to cough and bring up a small quantity of mucupurulent sputum. The next day he complained of sweating and a feeling of weakness. There were no abnormal physical signs in the chest, but a radiogram (Fig. 42. ) on June 3rd shewed a lack of translucency at the base of the right lung with obliteration of the line of the right diaphragm. The remainder of the lung fields were clear.

The patient was not free from pain in the back until the fifteenth day. He often described the sensation as a"coldness" rather than as an actual pain. On the tenth day medium crepitations were audible at the front and back of the chest at the base of the right lung. These accompaniments were audible for one week. The patient was allowed to get up on June 14th. On this day a second radiogram (Fig. 43.) shewed that the lung fields were now normal. The heart was drawn over slightly to the right. On June 23rd the man was discharged home on two weeks sick leave. On his return he complained that he had felt faint once or twice whilst on leave. He was therefore detained in hospital for a further period, and not discharged to duty until July 27th.

Laboratory data: Direct examination of the sputum shewed some streptococci, pneumococci and small Gram negative bacilli resembling H. influenza. There were no tubercle bacilli in the sputum.

On June 3rd the total leucocyte count was 7,800 per c.mm., with a differential count of 64 per cent. neutrophil polymorphonuclears, 28 per cent. lymphocytes, 6 per cent. eosinophils, and 2 per cent. mononuclears.

On June 19th the erythrocyte sedimentation rate was 5 mm. in one hour (Westergren).

Treatment: Aspirin gr. 10 was given every four hours for the first few days. An expectorant mixture was then prescribed. After the first

week cod liver oil and malt was given twice daily.

Result: This was satisfactory, though the illness was a long one. The man was off duty for eight weeks.

Complications: There were no complications.

Name

P. B.

No: 24

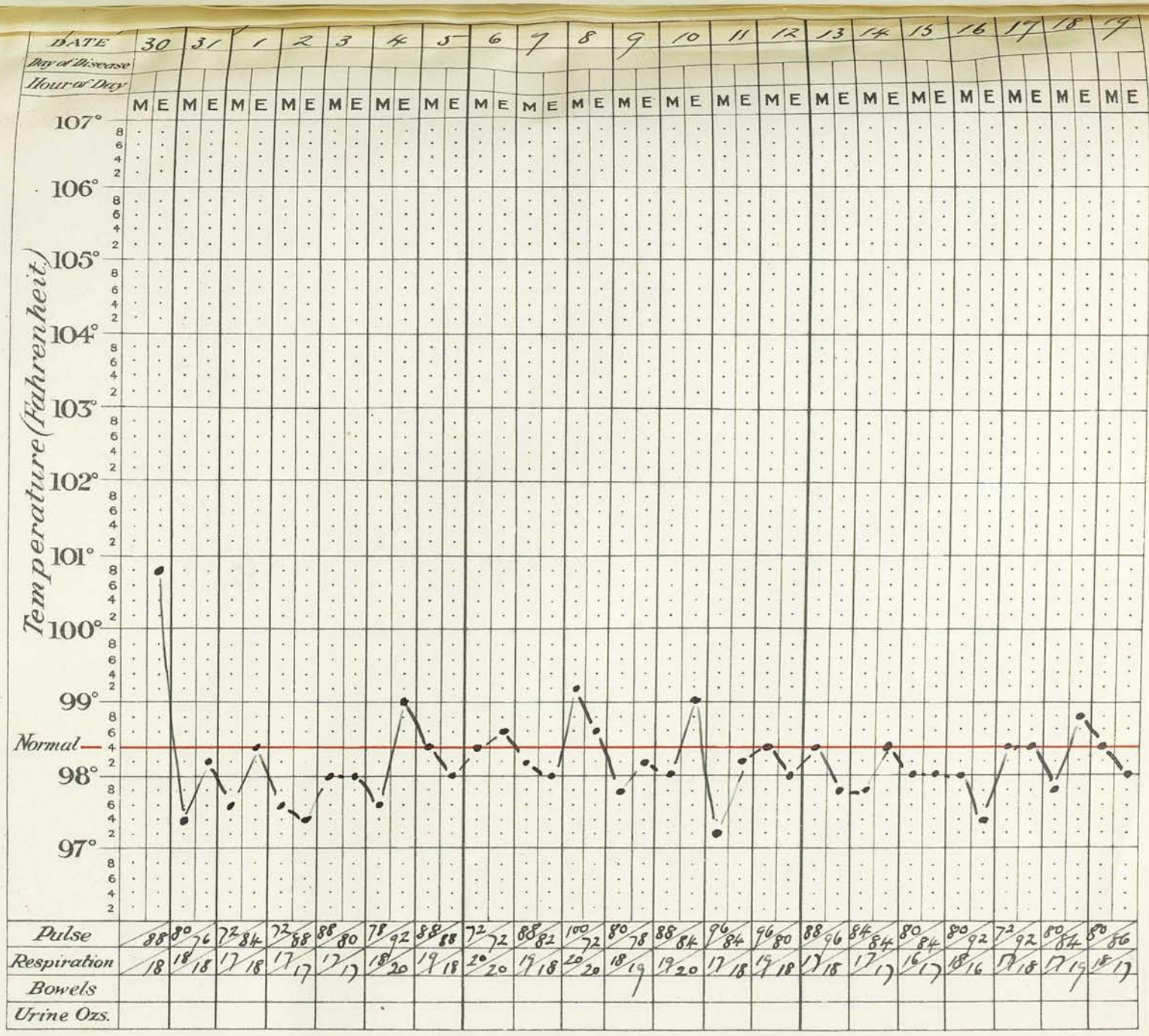
Occupation

Disease

Treatment

Discharged

Result & Notes

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Name

P. B.

No: 24

Occupation

Disease

Treatment

Discharged

Result & Notes

| DATE | 20 | 21 | 22 | 23 |
|---|---|---|---|---|
| Day of Disease | | | | |
| Hour of Day | M E | M E | M E | M E |
| Pulse | 80 84 | 80 86 | 80 82 | 78 |
| Respiration | 16 16 | 18 17 | 17 18 | 17 |
| Bowels | | | | |
| Urine Ozs. | | | | |

Temperature (Fahrenheit.)

107° 106° 105° 104° 103° 102° 101° 100° 99° Normal 98° 97°

CLINICAL CHART. Printed and Published by Boots Pure Drug Co. Ltd., Head Offices: NOTTINGHAM.

Case No: 25.

J. E. Aged twenty-eight.
Ordinary seaman.
In training.

Date of admission to hospital: June 12th 1941.

Previous History: The patient suffered from mumps, scarlet fever and measles in childhood. Two weeks before the present illness he had an attack of rubella.

Family History: There was nothing of consequence in this.

Mode of Onset of Disease: This man had been discharged from hospital, where he had been treated for rubella, only one week before the onset of the present illness. For twenty-four hours he had had pain in the chest at the base of the right lung. The pain was felt on deep breathing and on exertion. It was accompanied by a slight cough with sputum.

Physical Examination on admission: The temperature was 98.4° F., and the pulse rate 80 per minute. The respiratory rate was normal. At the base of the right lung there was diminished air entry and an occasional coarse crepitation. A radiogram (Fig. 44) taken on the day of admission showed that the whole of the base of the right lung field was occupied by regular fine mottled shadows. There was marked accentuation of the normal lung striations here. Both lung root shadows were prominent and there was a generalised accentuation of the finer lung markings in both lungs.

Clinical Course: There was little pyrexia during the period of stay in hospital. Sputum was scanty and mucoid in character. On the fifth day the man was still complaining of pain at the base of the right lung on deep breathing. Medium "sticky" rales were audible in the front of the right base. These accompaniments were present for two days only. On June 19th the patient was allowed to get up for the first time. At first he felt tired when up and complained of slight sweating, but this soon passed away. On June 24th a second radiogram (Fig. 45.) shewed complete resolution of the disease at the right base. Generalised accentuation of the finer lung markingswas still to be noted. Two days later the man was discharged home on ten days sick leave. On his return he went to duty.

Laboratory data: Direct examination of the sputum shewed fairly numerous mixed organisms with Gram positive diplococci, resembling pneumococci, predominating.

On the day of admission the total leucocyte count was 6,200 per c.mm., with a differential count of 54 per cent. neutrophil polymorphonuclears, 40 per cent. lymphocytes, 4 per cent. mononuclears, and 2 per cent eosinophils.

Treatment: An expectorant mixture was prescribed three times a day throughout the period of stay in hospital. Cod liver oil and malt was given in addition.

Clinical Course: There was little pyrexia during the period of stay in hospital. Sputum was scanty and mucoid in character. On the fifth day the man was still complaining of pain at the base of the right lung on deep breathing. Medium "sticky" rales were audible in the front of the right base. These accompaniments were present for two days only. On June 19th the patient was allowed to get up for the first time. At first he felt tired when up and complained of slight sweating, but this soon passed away. On June 24th a second radiogram (Fig. 45.) shewed complete resolution of the disease at the right base. Generalised accentuation of the finer lung markingswas still to be noted. Two days later the man was discharged home on ten days sick leave. On his return he went to duty.

Laboratory data: Direct examination of the sputum shewed fairly numerous mixed organisms with Gram positive diplococci, resembling pneumococci, predominating.

On the day of admission the total leucocyte count was 6,200 per c.mm., with a differential count of 54 per cent. neutrophil polymorphonuclears, 40 per cent. lymphocytes, 4 per cent. mononuclears, and 2 per cent eosinophils.

Treatment: An expectorant mixture was prescribed three times a day throughout the period of stay in hospital. Cod liver oil and malt was given in addition.

Result: This was satisfactory. Including the time spent in hospital when suffering from rubella, the man was in the wards for four weeks. He was off duty for five and a half weeks.

Complications: The pneumonitis must have developed during the course of rubella, but at the time of discharge from hospital following rubella there were no complaints relative to the respiratory system and there were no abnormal signs in the chest.

Name

J. E.

No : 25

Occupation

Disease

Treatment

Discharged

Result & Notes

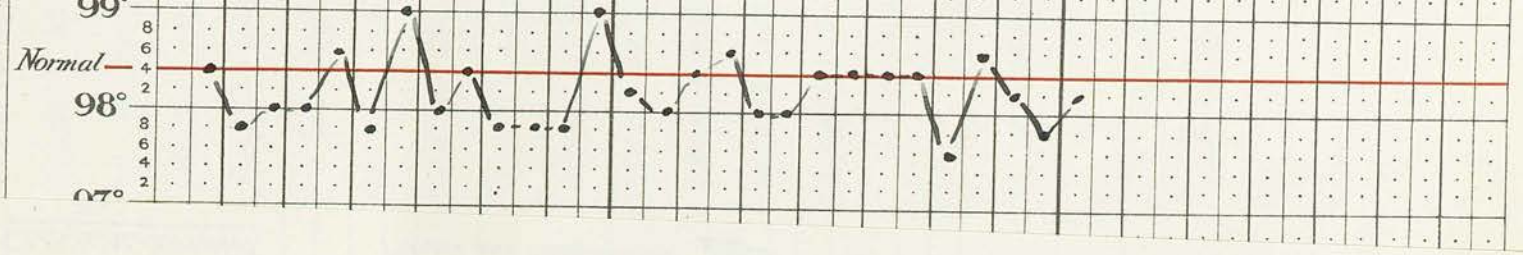
June 1941

| DATE | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day of Disease | | | | | | | | | | | | | | | |
| Hour of Day | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E | M E |

Temperature (Fahrenheit)

107° 106° 105° 104° 103° 102° 101° 100° 99° 98° 97°

Normal



Case No: 26.

D. H. Aged twenty-six.
Lieut. R.N.V.R.
H.M.S. Ganges.

Date of admission to hospital: October 13th 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of Disease: This illness began on October 8th with chill, generalised bone and muscle pains, cough with sputum, and constipation.

Physical Examination on admission: The temperature was 99° F., and the pulse rate 90 per minute. The respiratory rate was normal. The throat was injected. A few rhonci and coarse crepitations were audible at the base of both lungs, chiefly at the base of the left lung.

Clinical Course: On the evening of the day of admission the patient was sweating profusely and was semi-delirious. Sweating persisted for some ten days and was very profuse at first. For a few nights, too, the man slept badly and spoke in a light-headed manner. For several days he felt very week, or "low" as he described it. He was therefore nursed as a strict bed case for two weeks. The cough was troublesome, hacking, and productive of a very little mucopurulent sputum. For a short period he complained of a dull aching pain in the back of the chest on coughing.

A radiogram of the chest (Fig. 46.) on October 16th shewed a marked cervico-dorsal scoliosis with the concavity to the left in the thoracic portion of the

vertebral column. The lower half of the left lung field was occupied by faint medium mottled opacities. The remainder of the lung fields were clear. The only abnormal signs in the lungs on this day were a few medium crepitations at the left base. On October 21st medium crepitations and a few rhonci were audible at both bases, but were more numerous at the right base than at the left. On this day the man complained of sore throat. The throat was slightly congested and the right tonsil was patched with white points of exudate. Vincent's organisms were present on the swab taken from the throat. On the following day the patient complained of pain across the front of the chest on coughing. By October 24th there were fewer accompaniments in the lungs. Rhonci were audible on the anterior aspect of both sides of the chest, and a few medium crepitations at the left base behind. The patient's condition was improving, but both tonsils were now patched with exudate. On October 27th the only accompaniments were a few post-tussive crepitations at the base of the left lung. Two days later the breath sounds were completely free from accompaniments.

For several days the tonsils remained coated with white flakes of tenacious exudate, but no soreness was complained of and it was apparent that this cheesy material was of no pathological significence. The throat was finally clean by November 3rd.

On October 31st the patient was allowed to get

up for the first time. A second radiogram on November 3rd shewed that the mottled opacities had now disappeared. But the line of the left diaphragm and the costo-diaphragmatic angle were obscured by a small collection of fluid. A third radiogram on November 11th showed normal lung fields with complete resolution of the former disease. On November 13th this Officer was discharged home on three weeks sick leave. On his return he was still complaining of some weakness and of sweating readily on exertion. There was no cough and a final radiogram (Fig. 47.) on December 5th again shewed normal lung fields. The patient was discharged first to light duty for two weeks and then to full duty.

Laboratory data: A direct examination of the sputum on October 14th shewed the presence of normal commensal organisms only.

The erythrocyte sedimentation rate on October 14th was 35 mm. in one hour. The blood Widal reaction was negative. The total leucocyte count was 10,600 per c.mm., with a differential count of 53 per cent. neutrophil polymorphonuclears, 28 per cent. lymphocytes, 15 per cent. eosinophils, 2 per cent. mononuclears and 2 per cent. myelocytes.

A swab taken from the throat on October 21st revealed numerous Vincent's organisms. Haemolytic streptococci were not present. By October 25th Vincent's organisms were absent.

Urinary investigations shewed no chemical or microscopic abnormality. The urine was sterile on culture.

Treatment: A gargle, an inhalation and an expectorant mixture were given every four hours at the beginning of treatment. Aspirin too was given in 10 gr. doses but was soon discontinued when the patient was seen to be in a semi-delirious state at night time. Frequent tepid sponging was ordered during the first few days. Treatment with sulphaphridine, 1.0 g. every four hours, was begun on October 16th., but had to be discontinued after two days on account of nausea.

For the Vincent's angina, gargling with hydrogen peroxide gargles was ordered, and painting of the throat with novarsenobillan solution. The expectorant mixture was given for two weeks. In the convalescent stages cod liver oil and malt was given, one tablespoonful twice a day.

Result: This was entirely successful. The patient was in hospital for four and a half weeks. He was off duty seven and a half weeks.

Complications: The pneumonitis was complicated by a small pleural effusion. The illness was associated with Vincent's angina.

Name

D. H.

No : 26

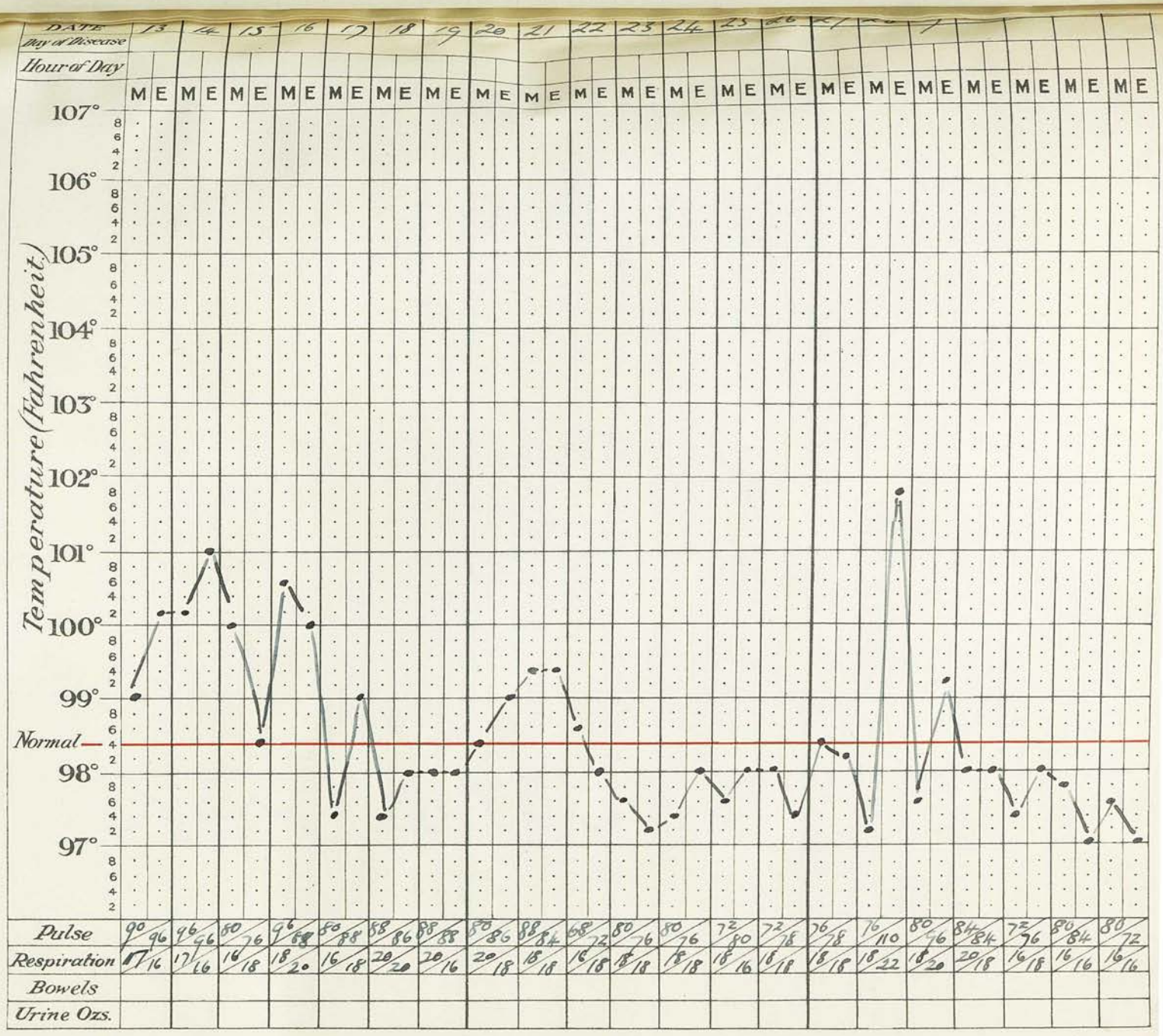
Occupation

Disease

Treatment

Discharged

Result & Notes




CLINICAL CHART.

Printed and Published by Boots Pure Drug Co. Ltd., Head Offices: NOTTINGHAM.

Case No: 27.

F.W.M. Aged thirty-three.
Ordinary Seaman.
From a destroyer.

Date of admission to hospital: November 10th 1941.

Previous History: This man had had pleurisy three times in the past. The last attack was in 1939.

Family History: The patient's father suffered from asthma.

Mode of Onset of Disease: The illness began with pain in the right side of the chest on November 7th. The pain was felt on deep breathing and kept the patient awake at night. The pain was accompanied by a cough with sputum.

Physical Examination on admission: The temperature, pulse and respiratory rates were normal. Rhonci and medium crepitations were audible at the base of the right lung. A radiogram (Fig. 48.) taken on entry to hospital shewed a fairly dense opacity, indicating consolidation, in the base of the right lung field in proximity to the cardio-phrenic angle. The remainder of the lung fields were clear.

Clinical Course: Once confined to bed, the patient had very little discomfort. Accompaniments were audible at the right base for one week. The cough was not very troublesome and was productive of only a moderate amount of mucopurulent sputum. A second radiogram (Fig. 49) on November 19th shewed normal lung fields, with complete resolution of the former disease.

On November 21st the patient was allowed up for the first time. Convalescence was completely satisfactory and the man was discharged home on ten days sick leave on November 27th.

Laboratory data: The erythrocyte sedimentation rate on November 12th was 15 mm. in one hour.

Direct examination of the sputum shewed numerous Gram positive organisms, many resembling pneumonococci in morphology. There were no tubercle bacilli in the sputum.

On November 19th the erythrocyte sedimenation rate was 8 mm. in one hour.

Treatment: An expectorant mixture was given three times a day for ten days.

Result: This was satisfactory. The patient was in hospital for seventeen days and off duty four weeks.

Complications: There were no complications.

November 1911

Name

F. W. M.

No: 27

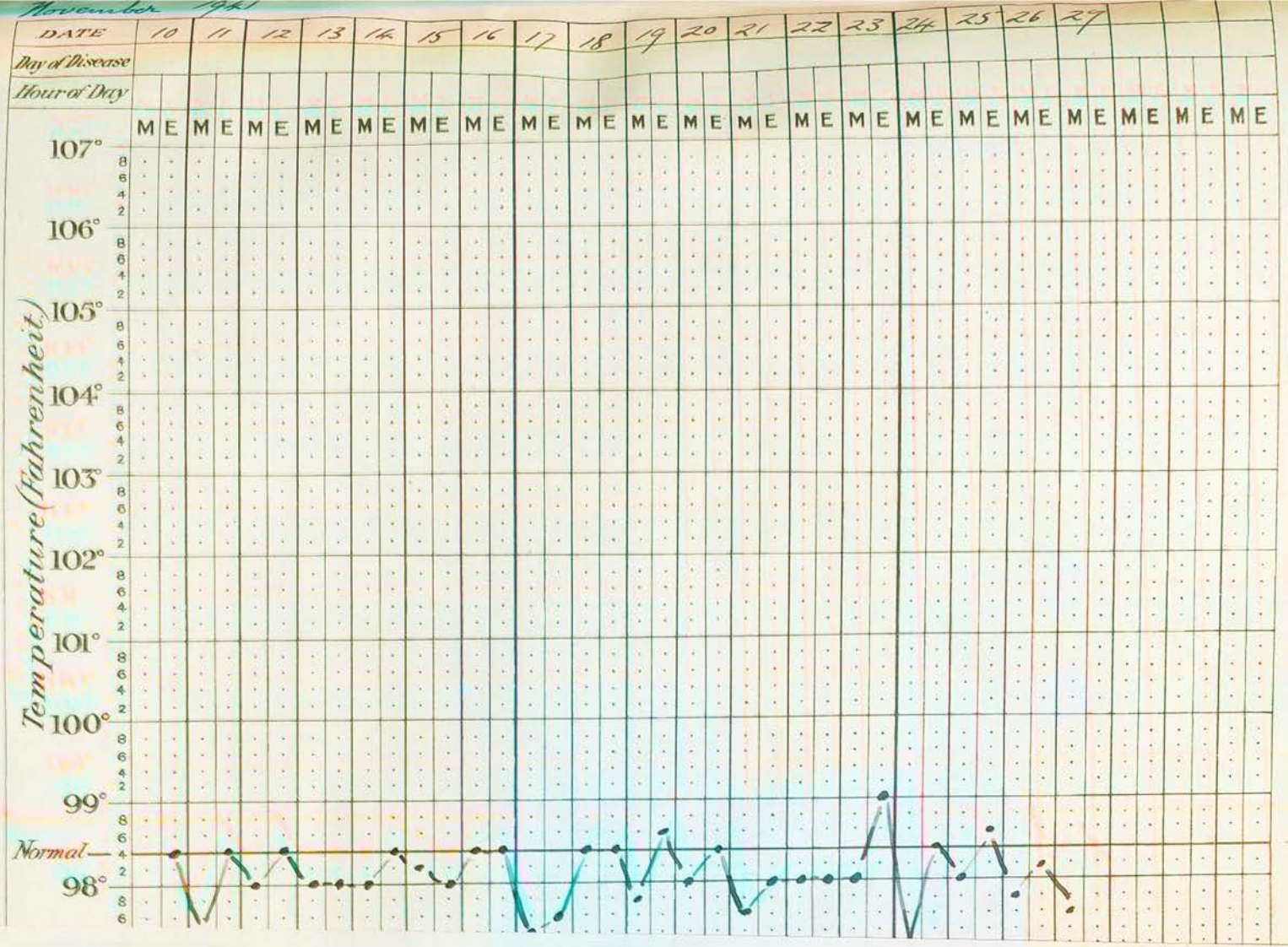
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 28.

S.W.H. Aged eighteen.
Ordinary Seaman.
In training.

Date of admission to hospital: November 11th 1941.

Previous and Family History: There was nothing of consequence in this.

Mode of Onset of Disease: The illness began on November 9th with pain in the chest at the base of the right lung, together with cough productive of sputum.

Physical Examination on admission: The temperature was 99° F., and the pulse rate 88 per minute. The respiratory rate was normal. There were a few sibilant rhonci scattered throughout both lungs. In addition, a few coarse crepitations were audible at the base of the right lung, where the breath sounds were hard vesicular in character.

Clinical Course: The illness was a protracted one without ever being severe. Pain was felt at the right base for some few days. The scattered rhonci, audible throughout both lungs at the time of admission to hospital, persisted for only twenty-four hours. Coarse crepitations were audible at the right base for as long as seventeen days. There was a very little sputum, mucopurulent in character, during the first few days of the illness. Thereafter the cough persisted, without being troublesome, for several weeks. The man complained of some sweating during

his illness, but it was never profuse.

On November 23rd a radiogram (Fig. 50) shewed faint irregular mottled opacities together with accentuation of the lung markings, in both lung bases. These appearances were most marked on the left side. The remainder of the lung fields were clear.

The patient was allowed to get up for the first time on November 20th. His recovery, as judged by the physical signs in the chest, was slow. Crepitations were audible at the right base until November 28th. Thereafter cough and slight sweating persisted and the man was therefore discharged home on two weeks sick leave on December 3rd.

On his return on December 18th the man still complained of cough. now again productive of sputum. There was no abnormality in the physical signs in the chest other than rustling breath sounds at the right lung base. A second radiogram (Fig. 51) on December 18th shewed a small patch of consolidation at the base of the right lung, just above the line of the right diaphragm. The patient was fit enough to be up, but there was an occasional slight evening rise of temperature and persistence of the dry cough. In the last week of December fine and medium crepitations were again audible over a small area at the right lung base. A third radiogram (Fig. 52 ) on December 22nd shewed that the area of consolidation had now slightly increased in size. The remainder of the lung fields were clear. In view of these findings the patient was recommended for a further

period of sick leave. On his return on January 16th he was feeling perfectly well again. Physical signs being now normal in every respect, the man was discharged to duty.

Laboratory data: Direct examination of the sputum shewed that morphological pneumonocci and staphylococci were present in fair numbers.

Tubercle bacilli were not present.

On November 14th the total leucocytes numbered 10.800.

Treatment: For the first few days antiphlogistine was prescribed for the relief of pain in the chest. An expectorant mixture was given four hourly. After the first week cod liver oil and malt was given in addition.

Result: This was satisfactory. The man was off duty for ten weeks.

Complications: There were no complications.

period of sick leave. On his return on January 16th he was feeling perfectly well again. Physical signs being now normal in every respect, the man was discharged to duty.

Laboratory data: Direct examination of the sputum shewed that morphological pneumonocci and staphylococci were present in fair numbers.

Tubercle bacilli were not present.

On November 14th the total leucocytes numbered 10.800.

Treatment: For the first few days antiphlogistine was prescribed for the relief of pain in the chest. An expectorant mixture was given four hourly. After the first week cod liver oil and malt was given in addition.

Result: This was satisfactory. The man was off duty for ten weeks.

Complications: There were no complications.

November 1941

Name

S.W.H.

No: 28

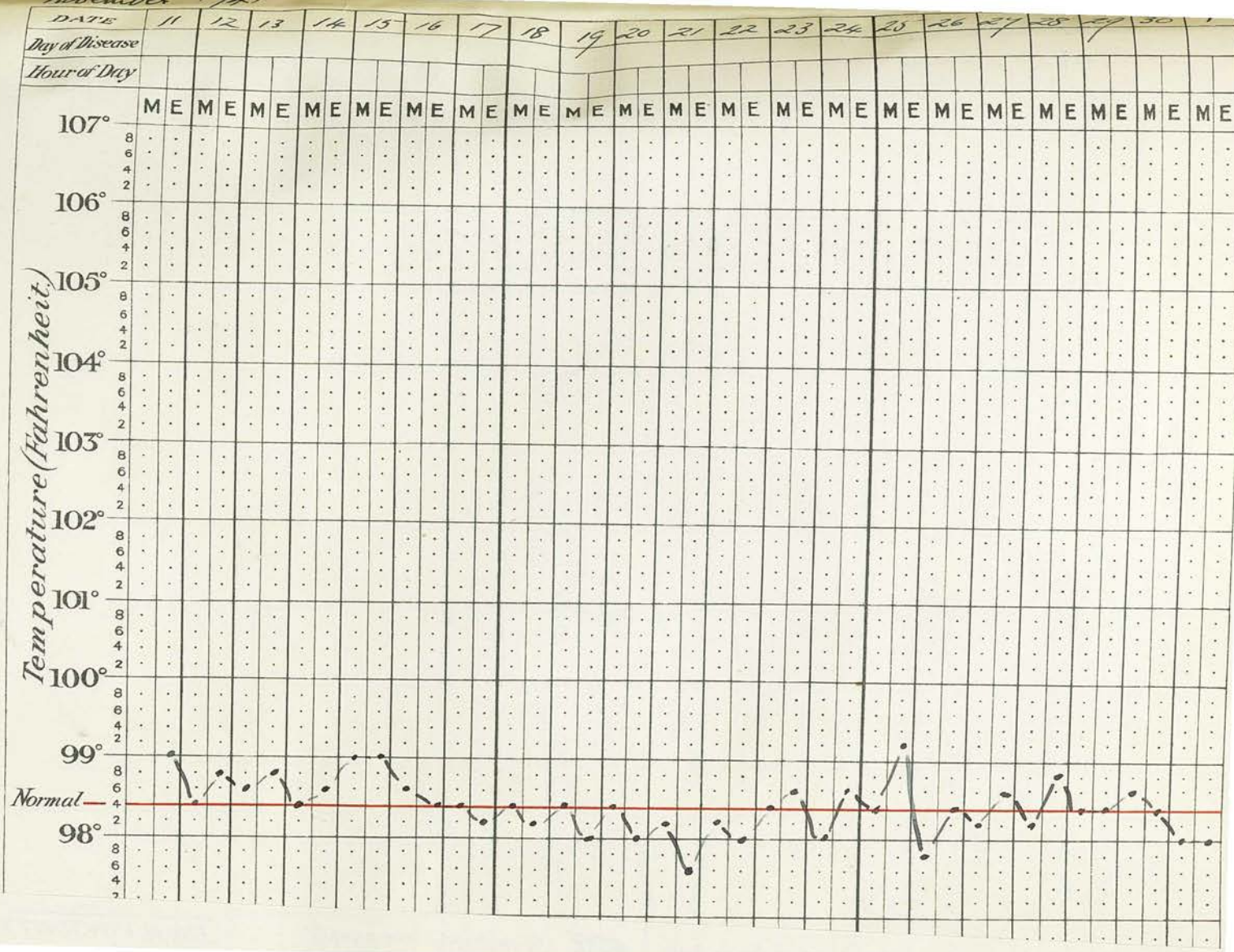
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 29.

J.R.T. Aged eighteen.
Ordinary seaman.
In training.

Date of admission to hospital: November 17th 1941.

Previous Family History: There was nothing of consequence in this.

Mode of Onset of Disease: The onset of the illness was with pain in the right side of the chest on November 14th. The pain was accompanied by the symptoms of a cold in the head and by a dry cough.

Physical Examination on admission: The temperature was 100° F., and the pulse rate 98 per minute. The respiratory rate was normal.

There was impairment of movement of the right side of the chest, but no impairment of the percussion note. Breath sounds were weaker on the right than on the left side. There were no accompaniments to the breath sounds. A radiogram (Fig. 53) on the day of admission to hospital shewed a fairly dense opacity in the lower right lung field. The opacity extended outwards from the hilum into the midfield of the lung. The remainder of the lung fields were clear.

Clinical Course: The patient himself was comfortable once put to bed, and no longer complained of pain in the chest. On November 18th a few medium crepitations were audible at the base of the right lung. On

November 21st distant rhonci were audible on auscultation at the mid level of the right mid auxillary line. The patient was now coughing up a very small quantity of mucopurulent sputum. By November 24th there were no accompaniments, and all physical signs in the chest were normal. On November 25th a second radiogram (Fig. 54) shewed that the opacity in the lower right lung field was now less dense, and that resolution of consolidation was taking place.

Convalescence was slow, but satisfactory. On December 6th the patient was allowed to get up. On December 11th he was discharged on three weeks sick leave to a convalescent home. On his return he felt well. He was free from symptoms and all physical signs were normal. He was discharged home for two further weeks sick leave, and then he returned to duty.

Laboratory data: Staphylococci were the predominant organisms in the sputum. Tubercle bacilli were not present.

The erythrocyte sedimentation rate on November 23rd was 23 mm. in one hour. The reading on December 4th was 7 mm. in one hour.

Treatment: Treatment was confined to general nursing measures. The administration of drugs was not considered necessary.

Result: This was satisfactory. The patient was in hospital for three and a half weeks; and off duty for nine weeks.

Complications: There were no complications.

November 1941

Name

J. R. T.

No: 29

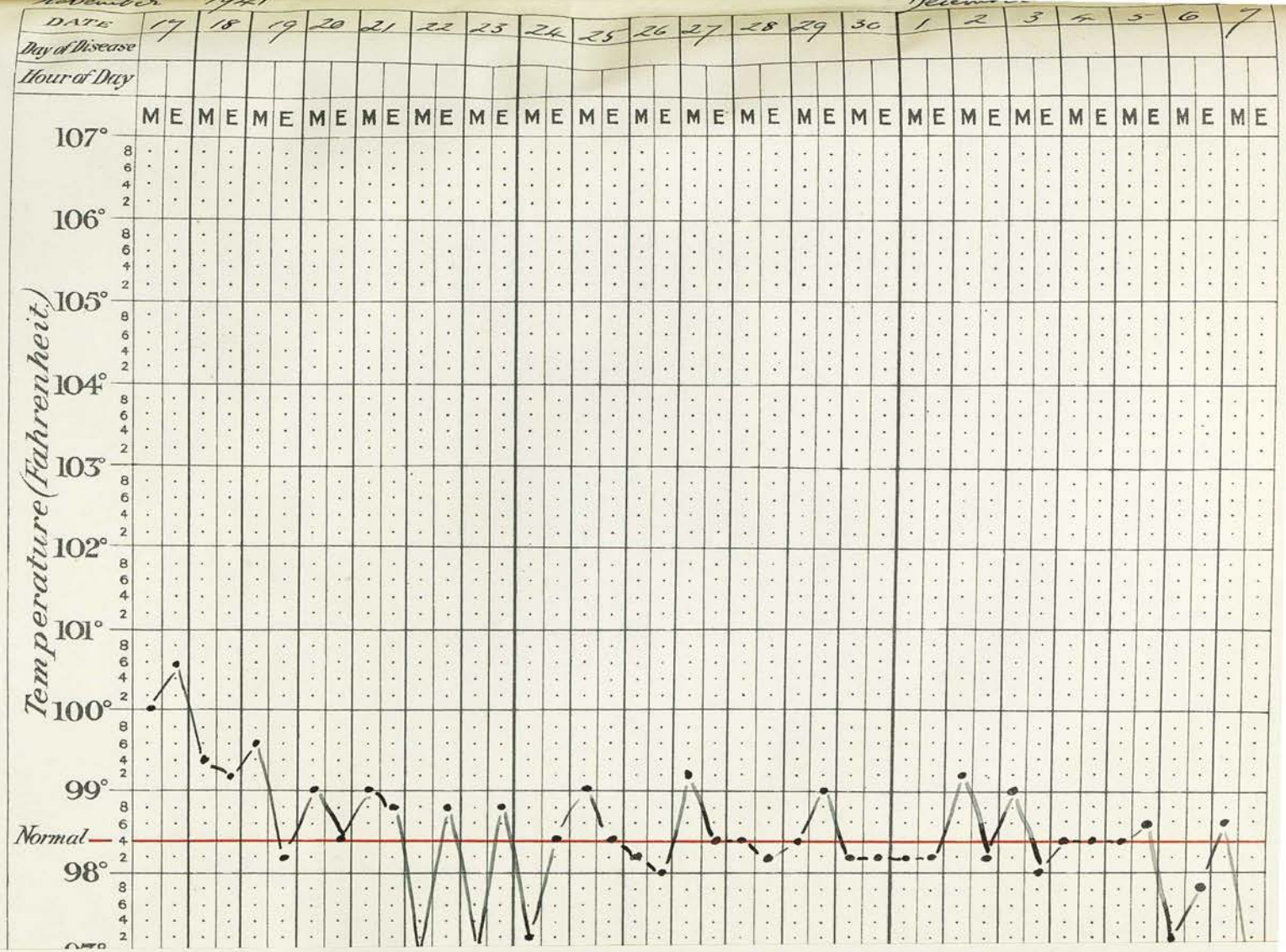
Occupation

Disease

Treatment

Discharged

Result & Notes



Case No: 30.

R.A.W. Aged twenty-six.
Stoker - second class
From a fleet minesweeper.

Date of admission to hospital: November 28th 1941.

Previous History: There was nothing of consequence in this.

Family History: The patient's sister died following an attack of congestion of the lungs. The patient's mother suffered from chronic bronchitis.

Mode of Onset of Disease: This was with malaise for one week, followed by the sudden onset of pain in the right side of the chest, and by the coughing of blood-stained sputum.

Physical Examination on admission: The temperature was 103° F., and the pulse rate 120 per minute. The respiratory rate was 28 per minute.

There was impairment of movement at the base of the right lung, together with some dulness on percussion. The breath sounds in this region were weak, and the accompaniments were medium crepitations.

Clinical Course: The cough was troublesome from the beginning of the illness. It was productive at first of only a small amount of blood-tinged mucopurulent sputum. On December 1st the patient was still complaining of pain in the right side of the chest, and also of pain in the right loin. A pleural rub was now audible in the anterior axillary line. A portable radiogram (Fig. 55) on this day shewed a hazy opacity at the base of

the right lung field. This opacity extended outwards from the cardio-phrenic angle to the lung periphery. The right lobe of the diaphragm was elevated. The remainder of the lung fields were clear.

On December 3rd the man complained of pain in the left loin and there was tenderness in both kidney angles. There was no abnormality in the urine other than an occasional leucocyte and red blood cell on microscopic examination. On December 9th the patient was still coughing up blood-tinged mucopurulent sputum. He was also sweating, but not as severely as at the time of the onset of his illness. There was still impairment of movement, dulness on percussion and weak breath sounds at the right lung base. The accompaniments were medium crepitations, but these were fewer than at first. A second radiogram (Fig. 56 ) on this day shewed that the area of hazy density was now more extensive, occupying the whole of the lower half of the right lung field. A third radiogram (Fig. 57) on December 18th shewed marked resolution of the former disease. In place of the opacity at the right lung base there were coarse mottled opacities and accentuated lung markings. The line of the right diaphragm was still irregular, but less elevated than formerly. On December 22nd the only abnormality in the physical signs was an occasional inspiratory rhoncus at the right base.

Not until December 26th were the physical signs in the chest restored to normal. The man was allowed

to get up for the first time on this day. Convalescence was satisfactory and on January 2nd 1942 he was discharged home on three weeks sick leave. On his return he was discharged to duty.

Laboratory data: Direct examination of the sputum revealed numerous N. catarrhatis, a fair number of streptococci and scanty staphylococci. There were no tubercle bacilli in the sputum.

The erythrocyte sedimentation rate on December 15th was 11 mm. in one hour. The reading on December 28th was 5 mm. in one hour.

Treatment: Antiphlogistine poultices were prescribed for the relief of the pleuritic pain in the early stages. An expectorant mixture was given four hourly for the relief of the cough. Easton's Syrup was prescribed as a tonic during the convalescent stage.

Result: This was satisfactory. The patient was in hospital for five weeks and off duty for eight weeks.

Complications: The illness was complicated by acute pleurisy in the early stages.

November 1941 December

Name

R. A. W.

No: 30

Occupation

Disease

Treatment

Discharged

Result & Notes

DATE 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

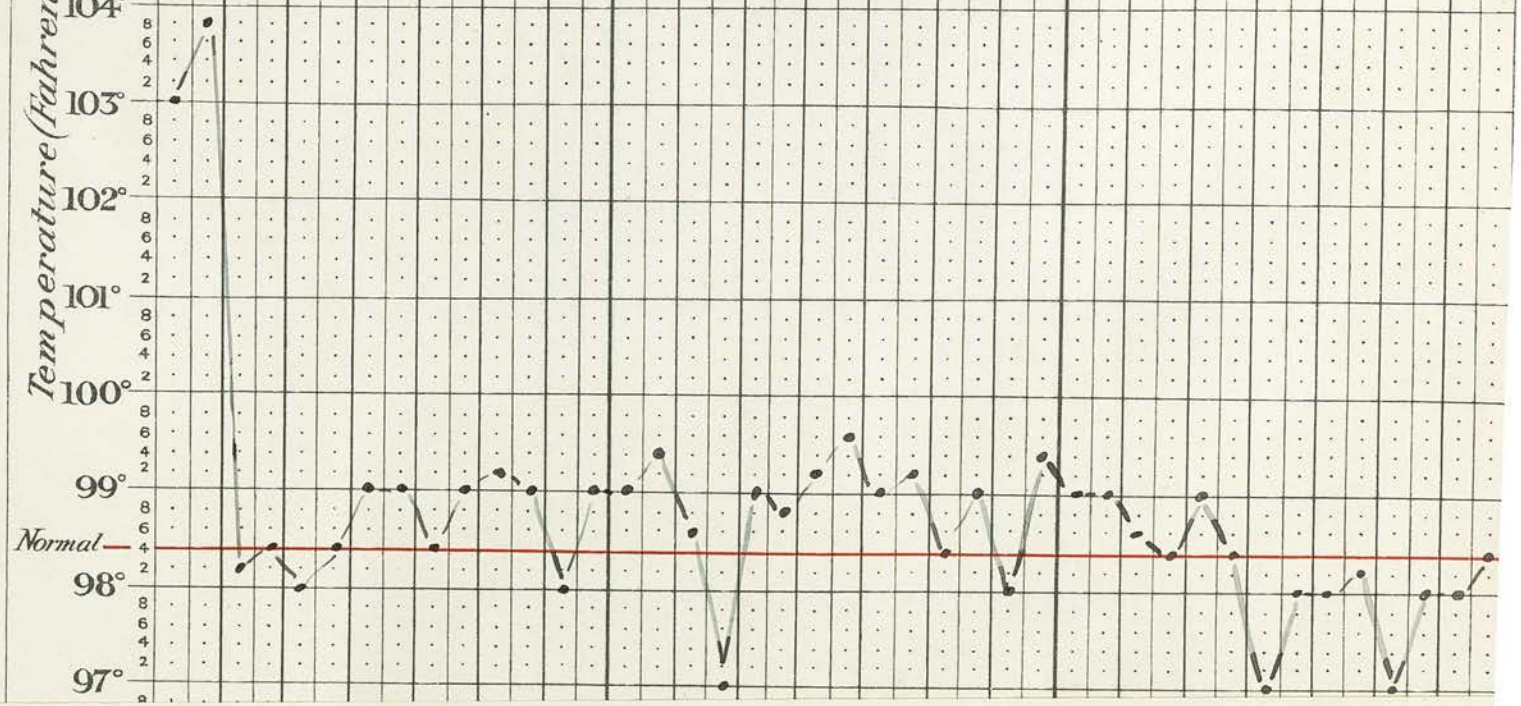
Day of Disease

Hour of Day

M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E

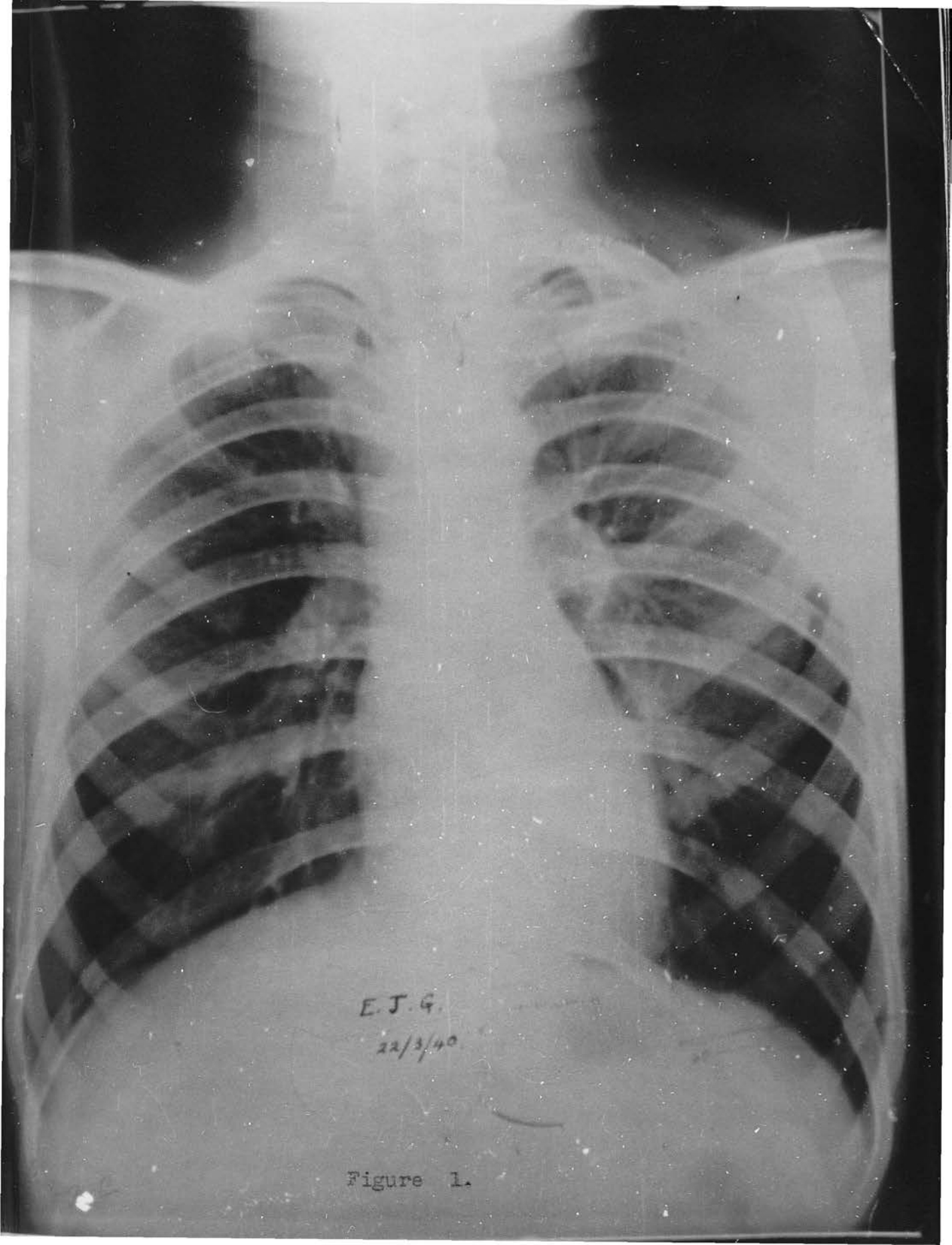
Temperature (Fahrenheit)

107° 106° 105° 104° 103° 102° 101° 100° 99° Normal 98° 97°



X.

Radiograms.

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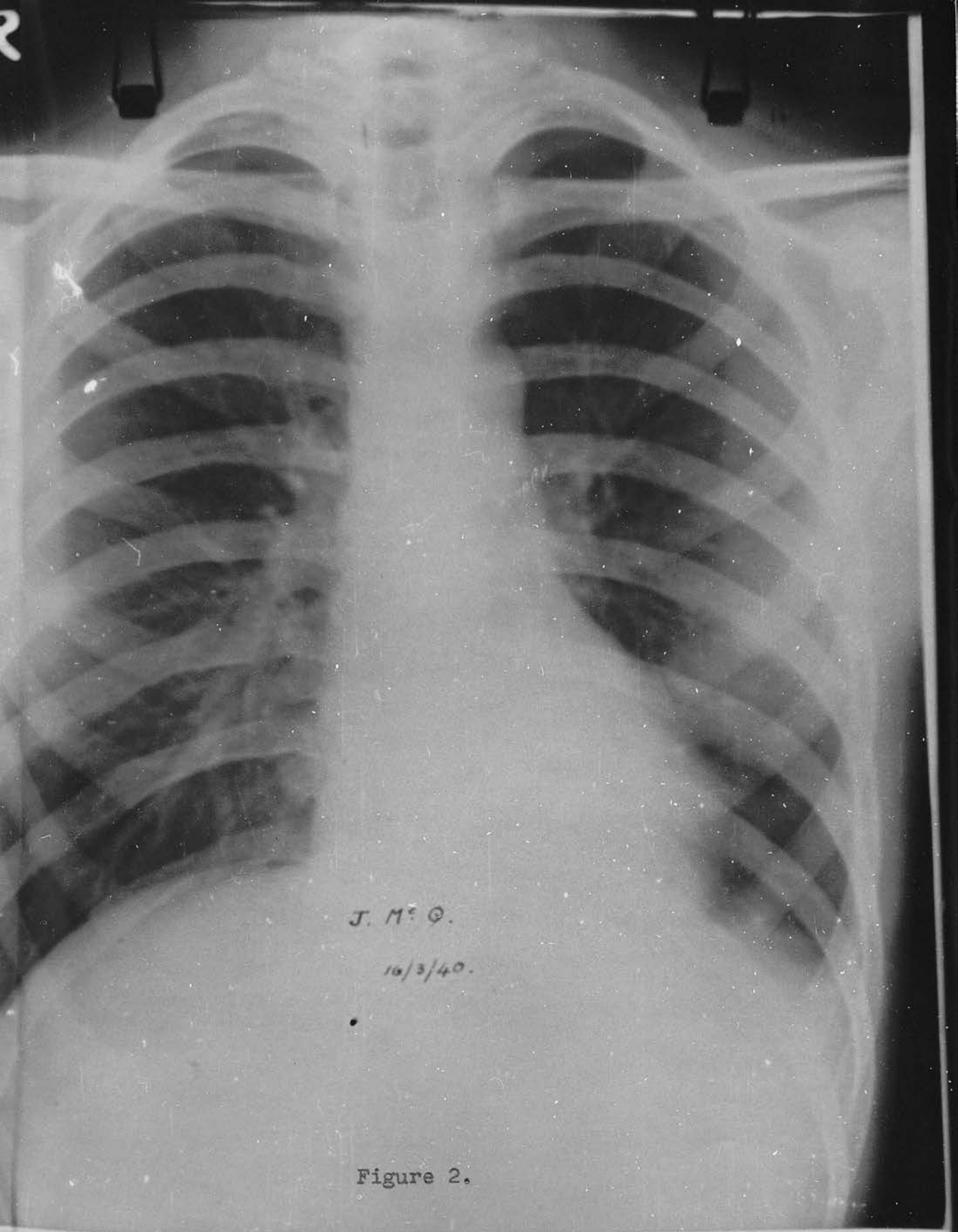


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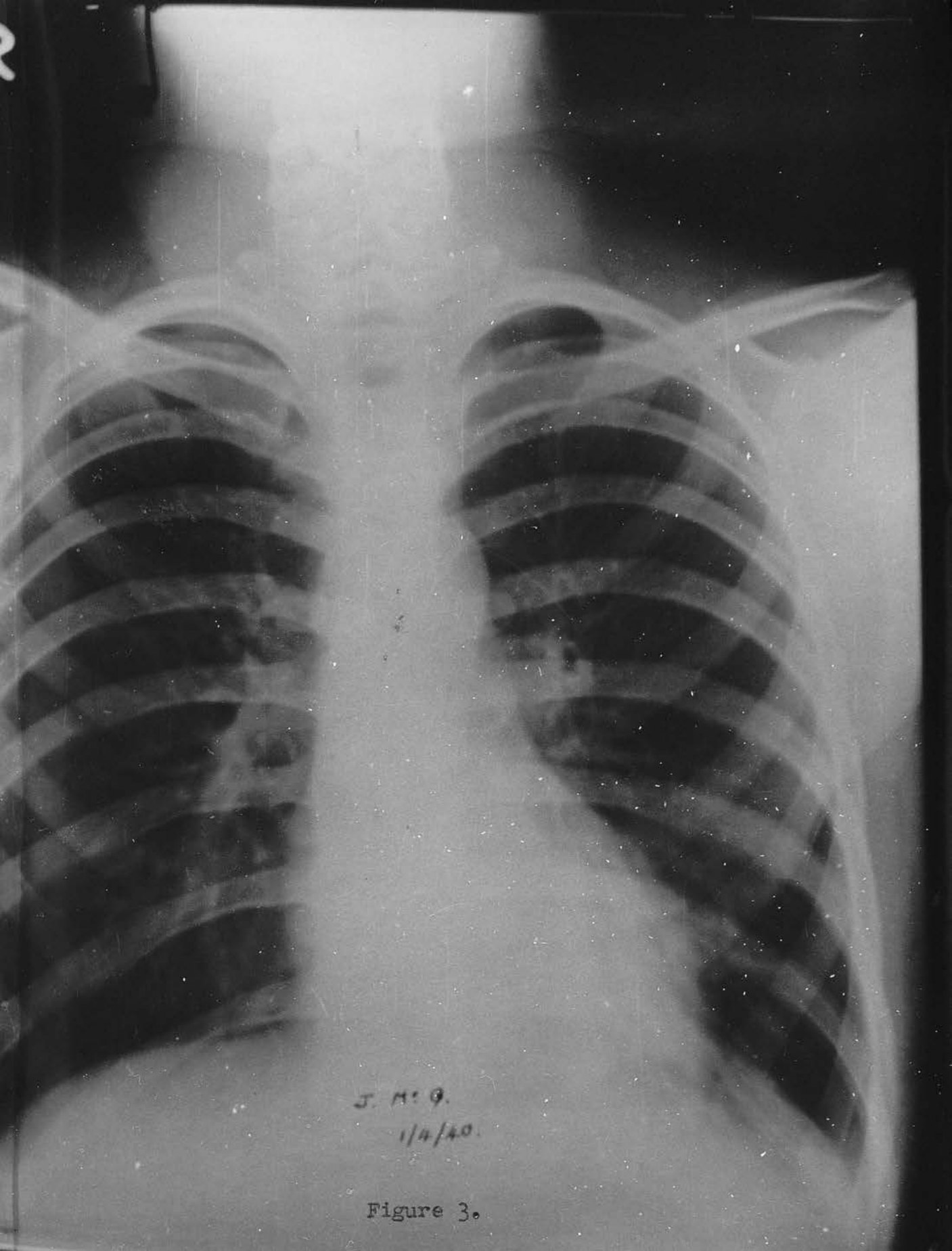


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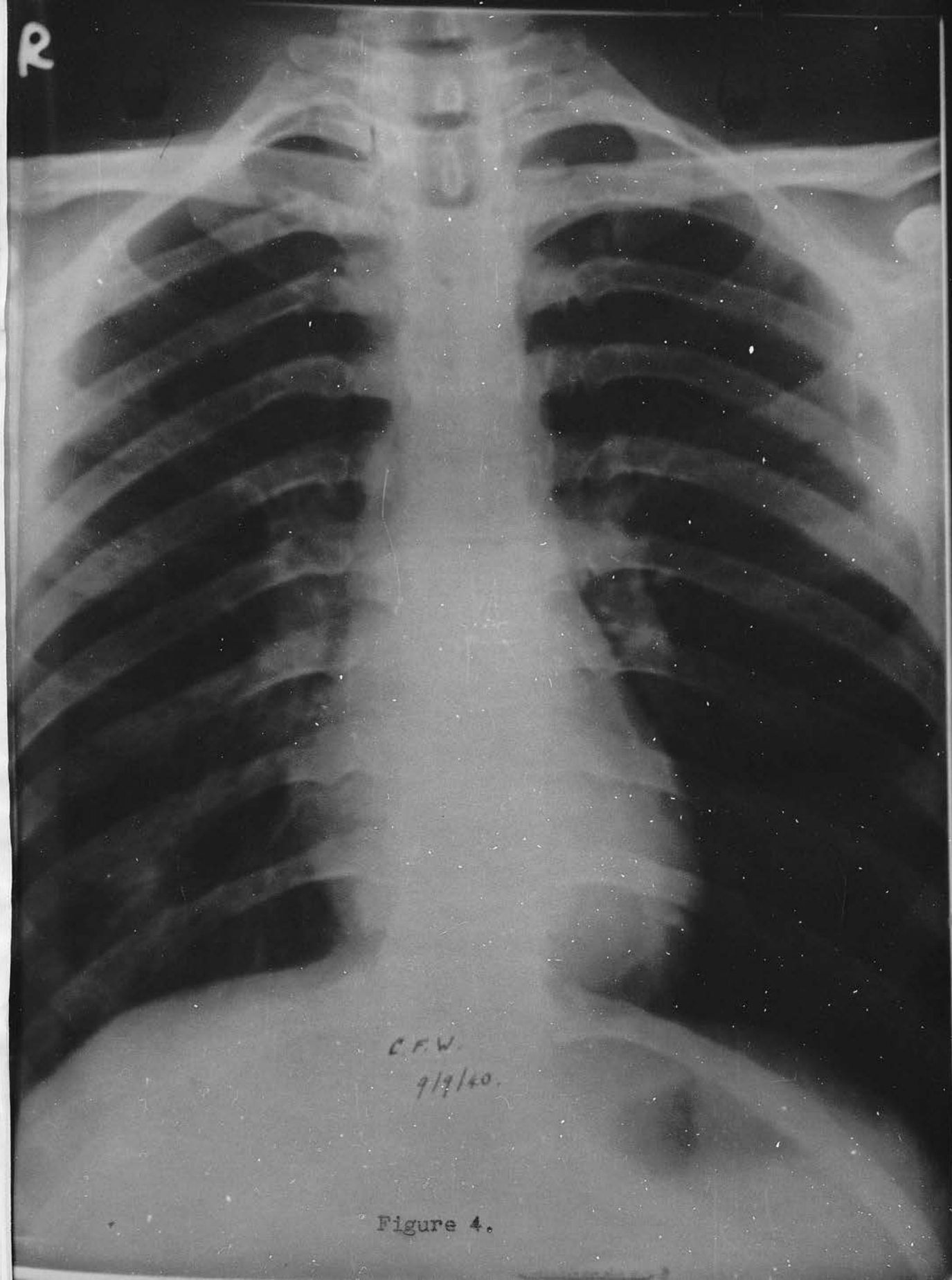


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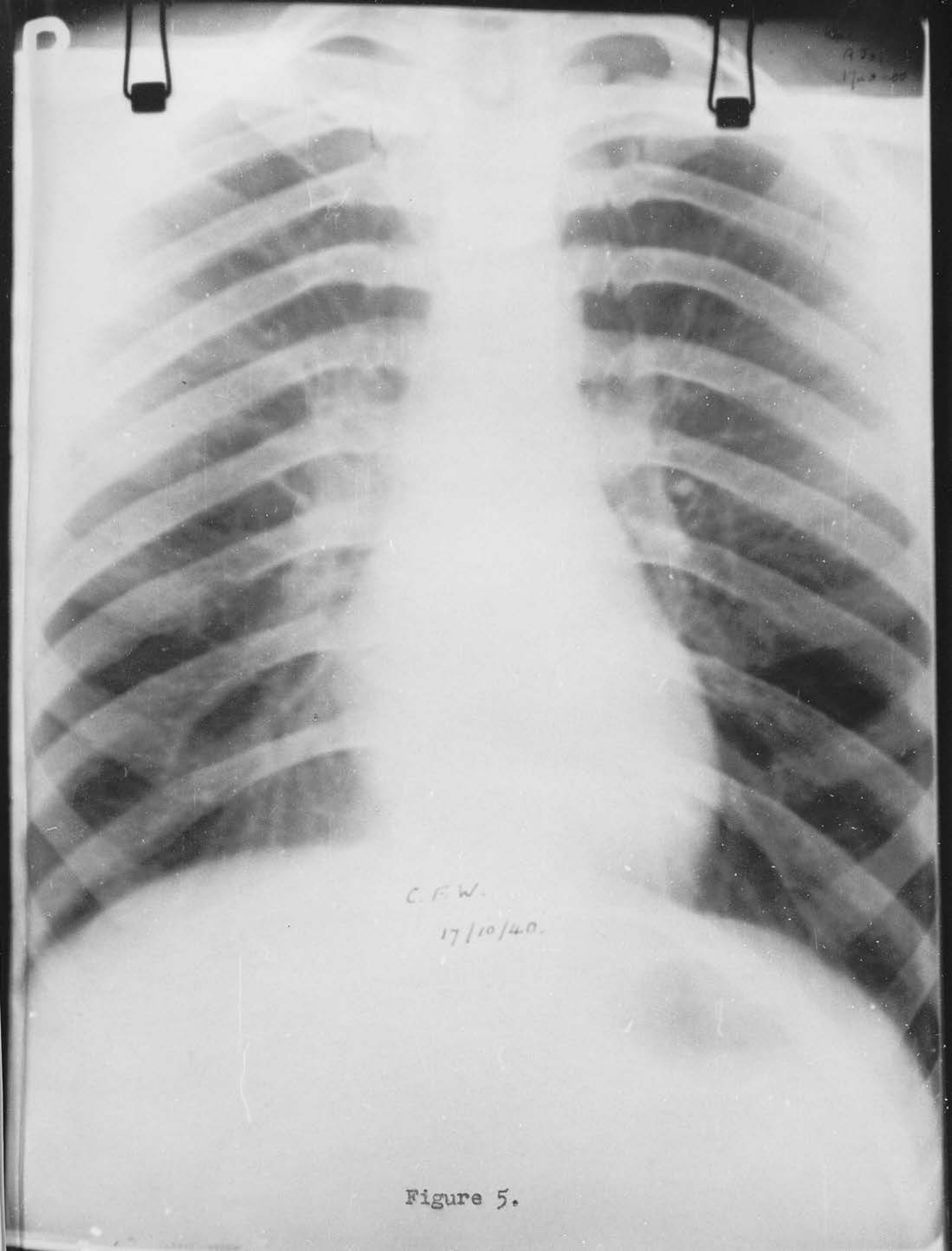


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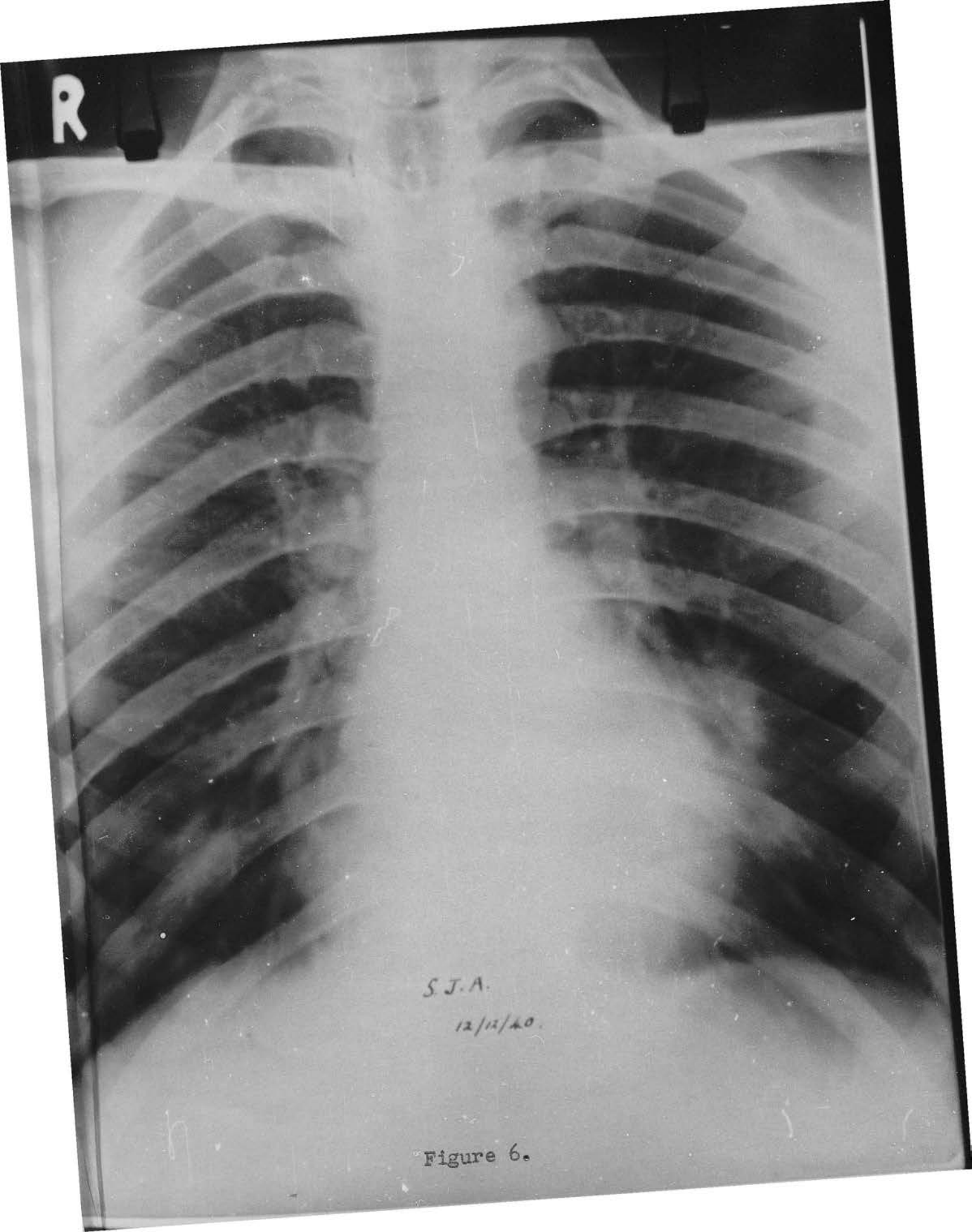


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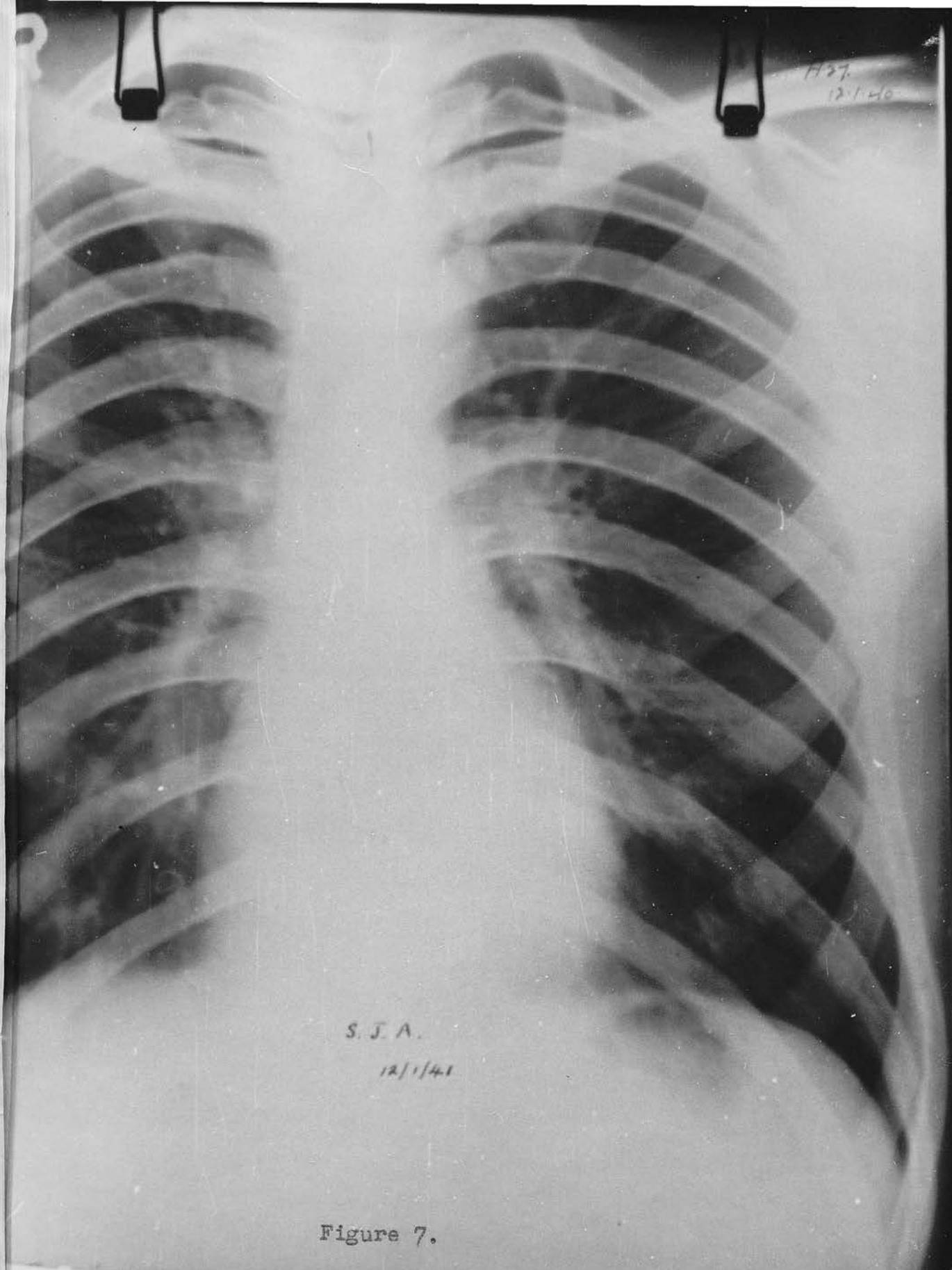


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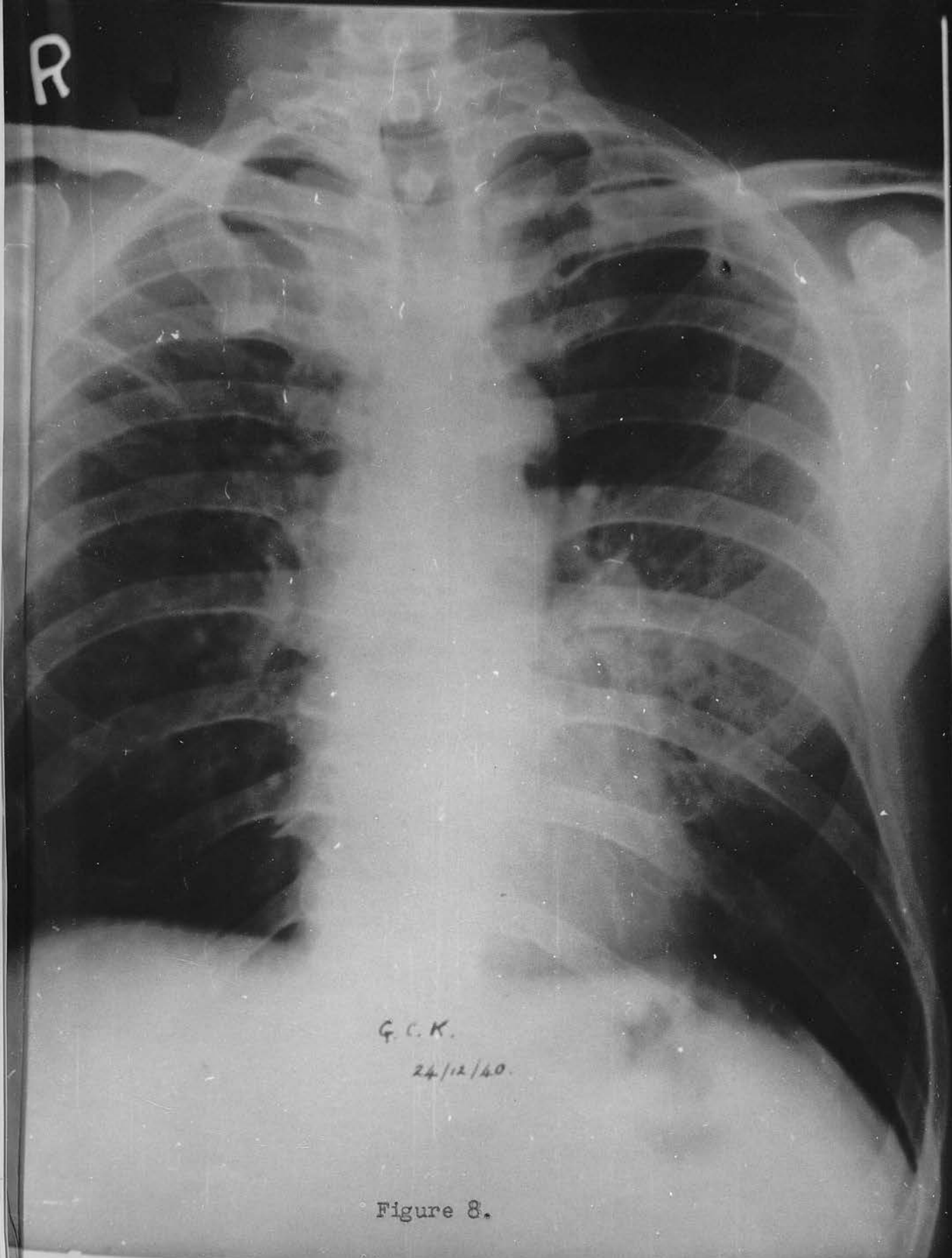


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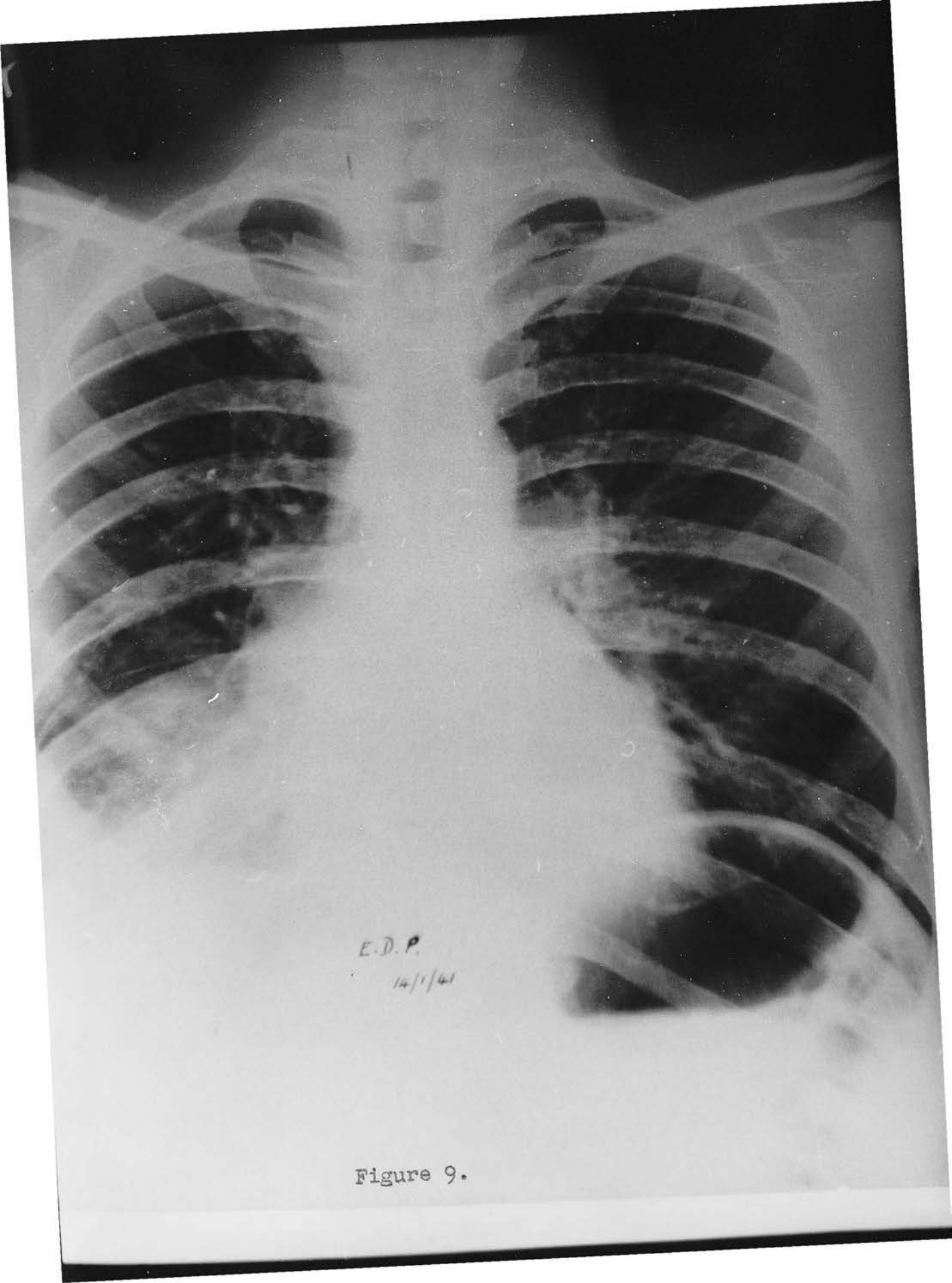


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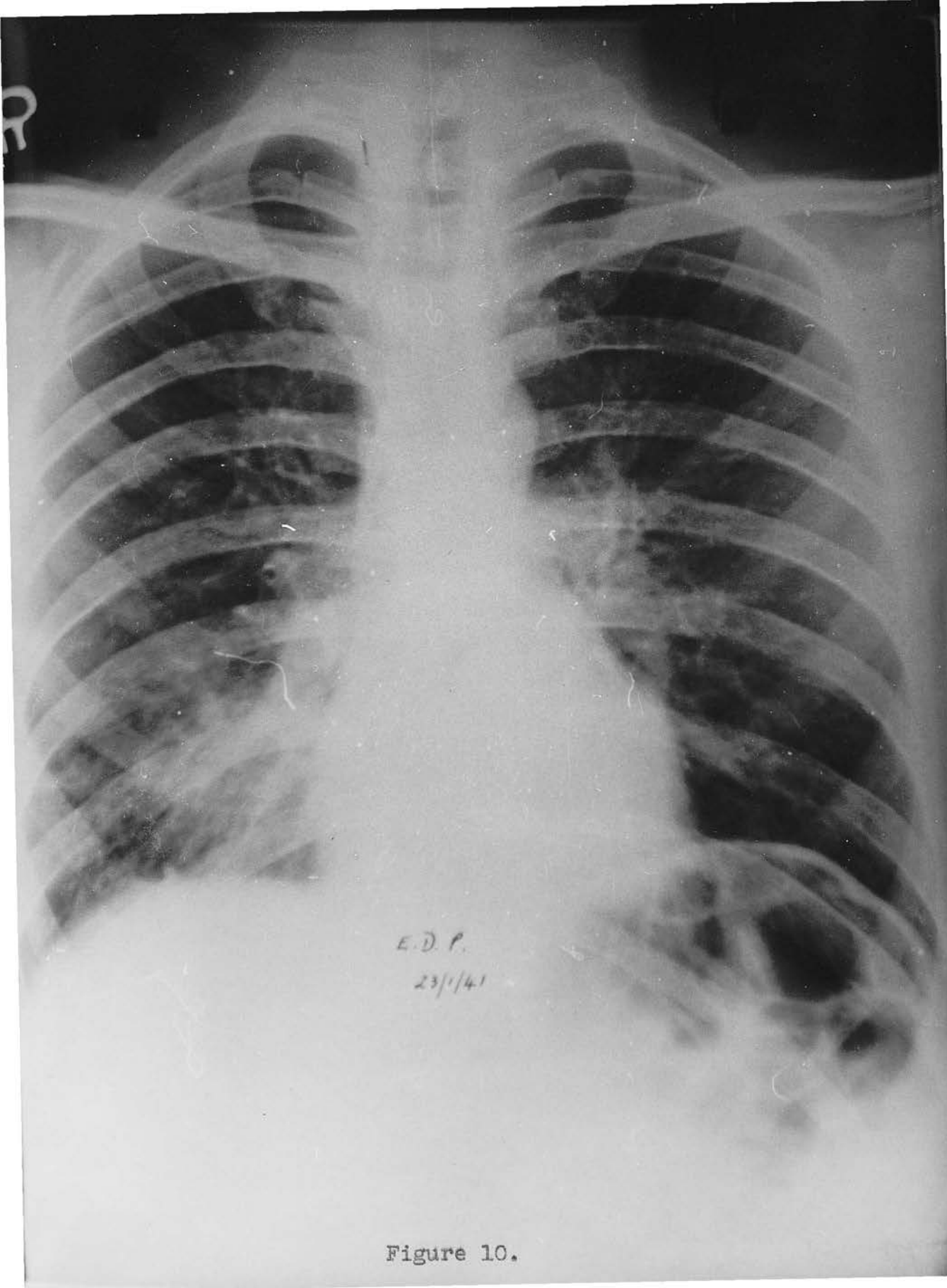


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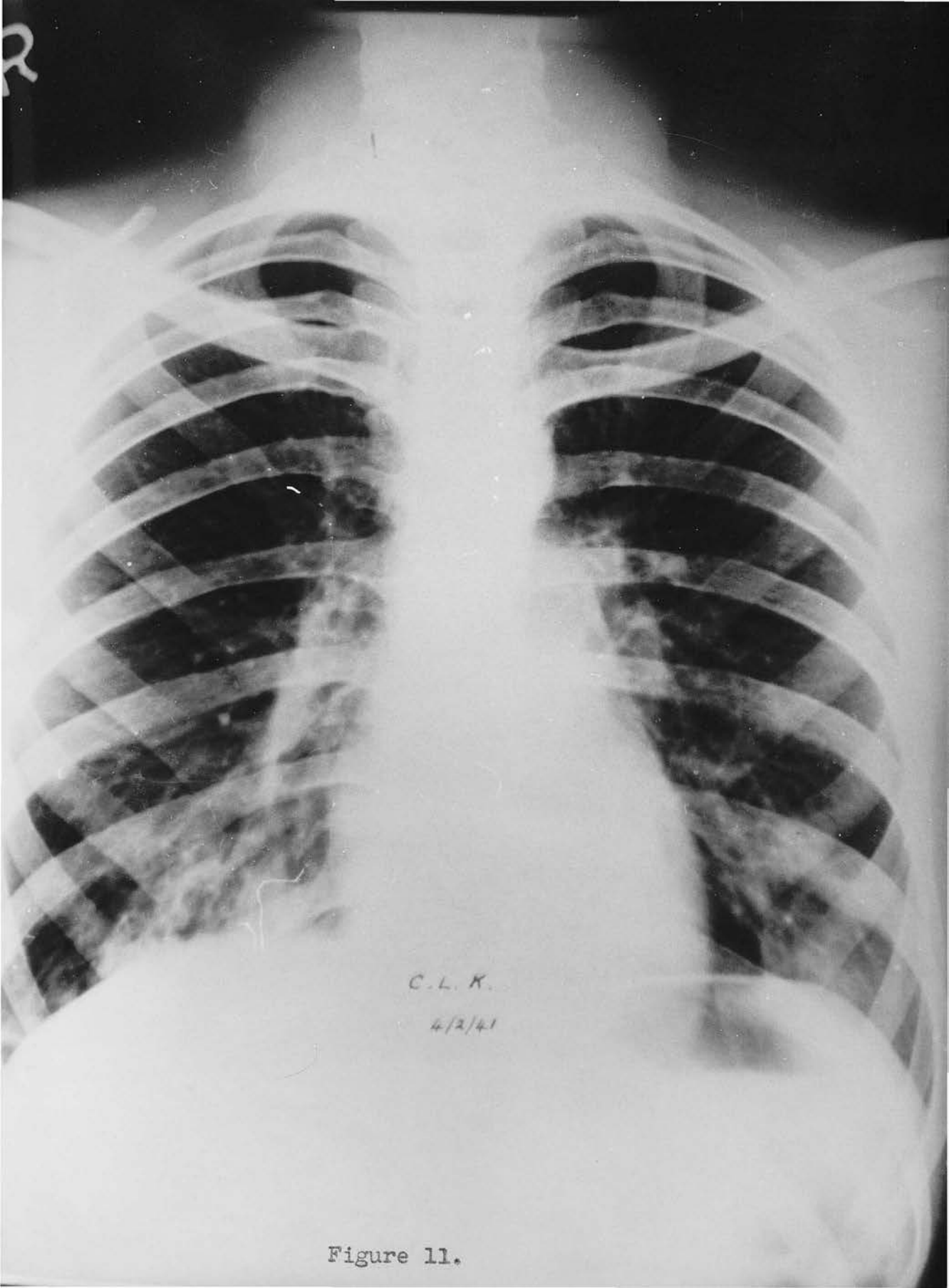


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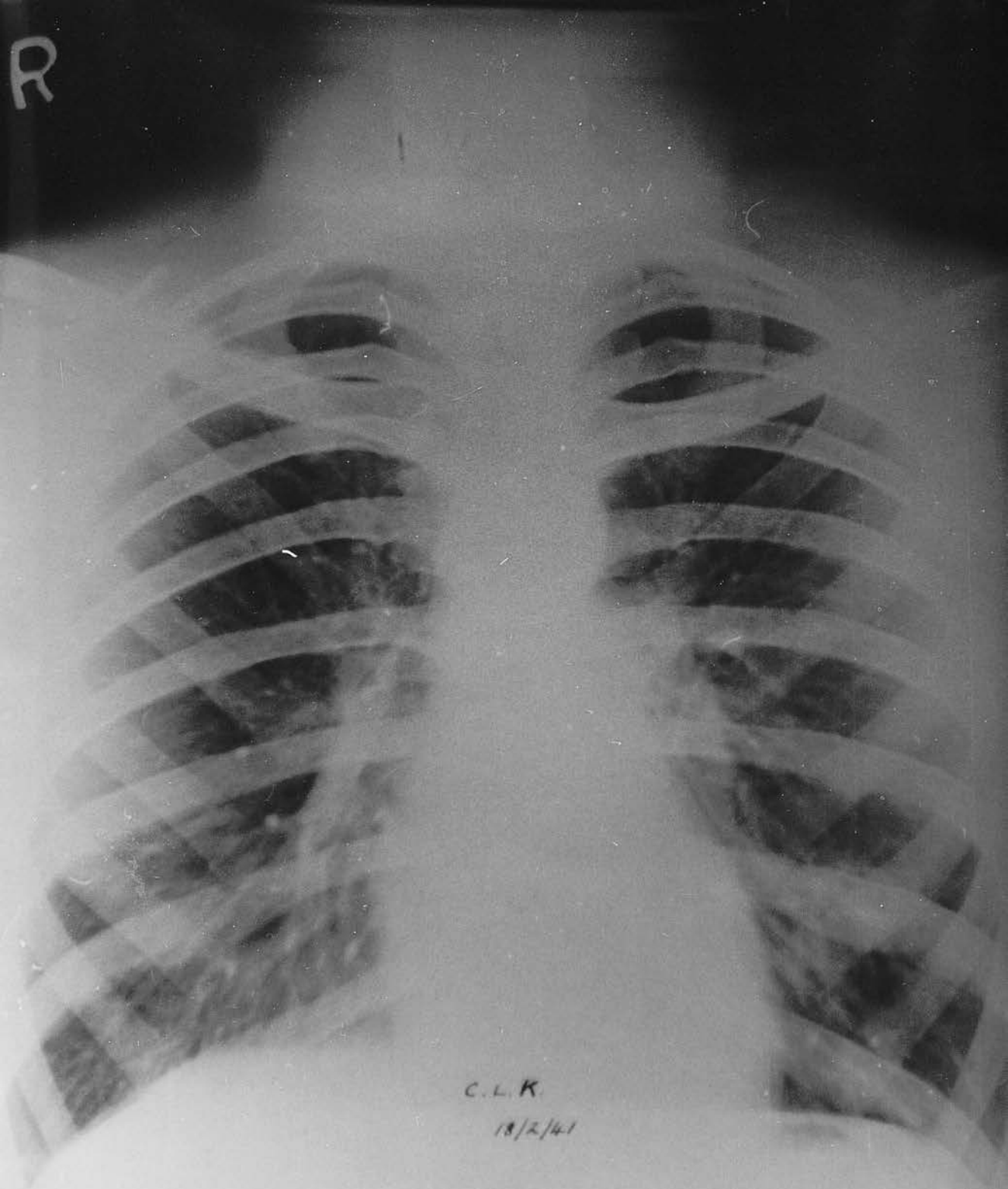


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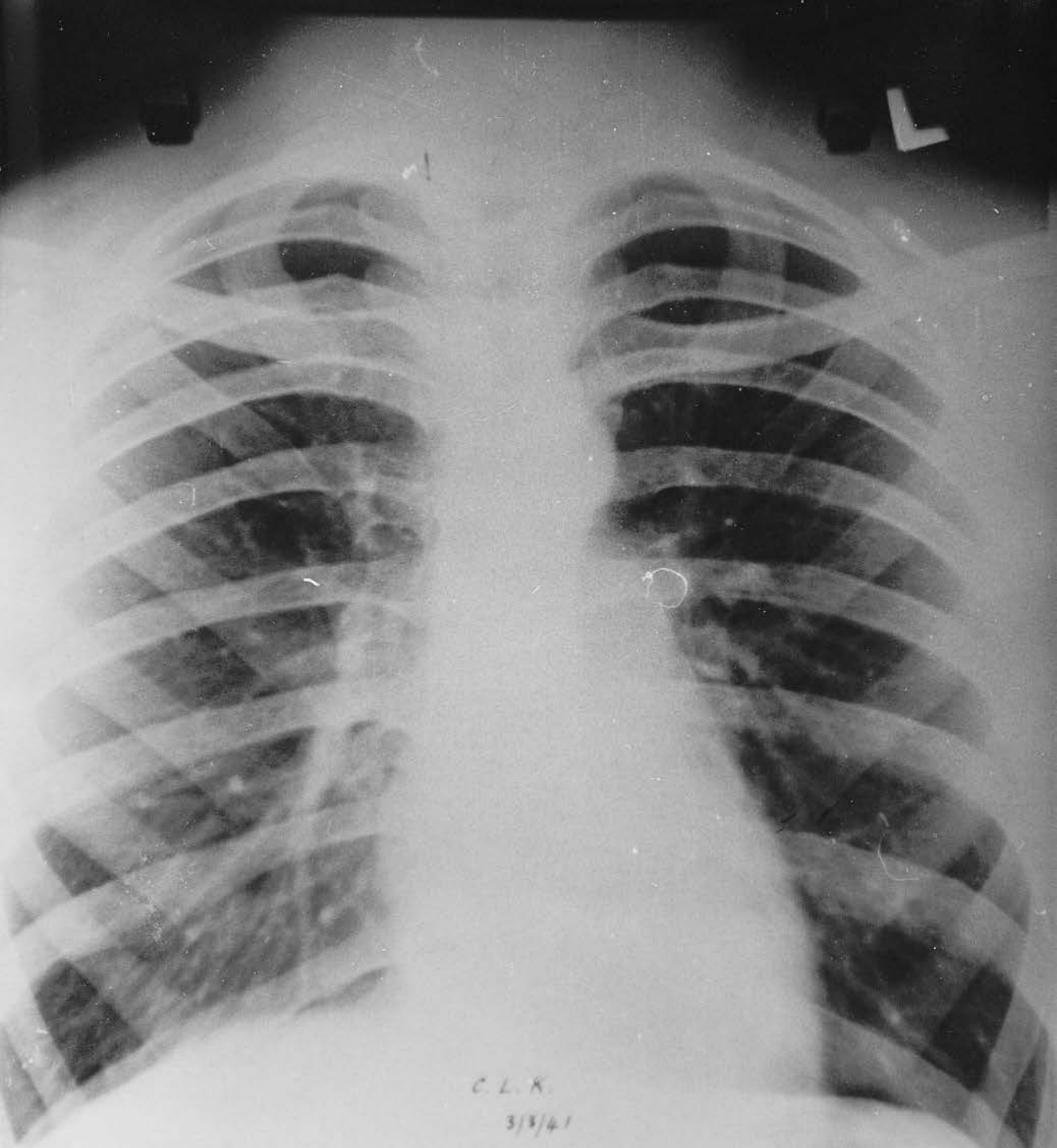


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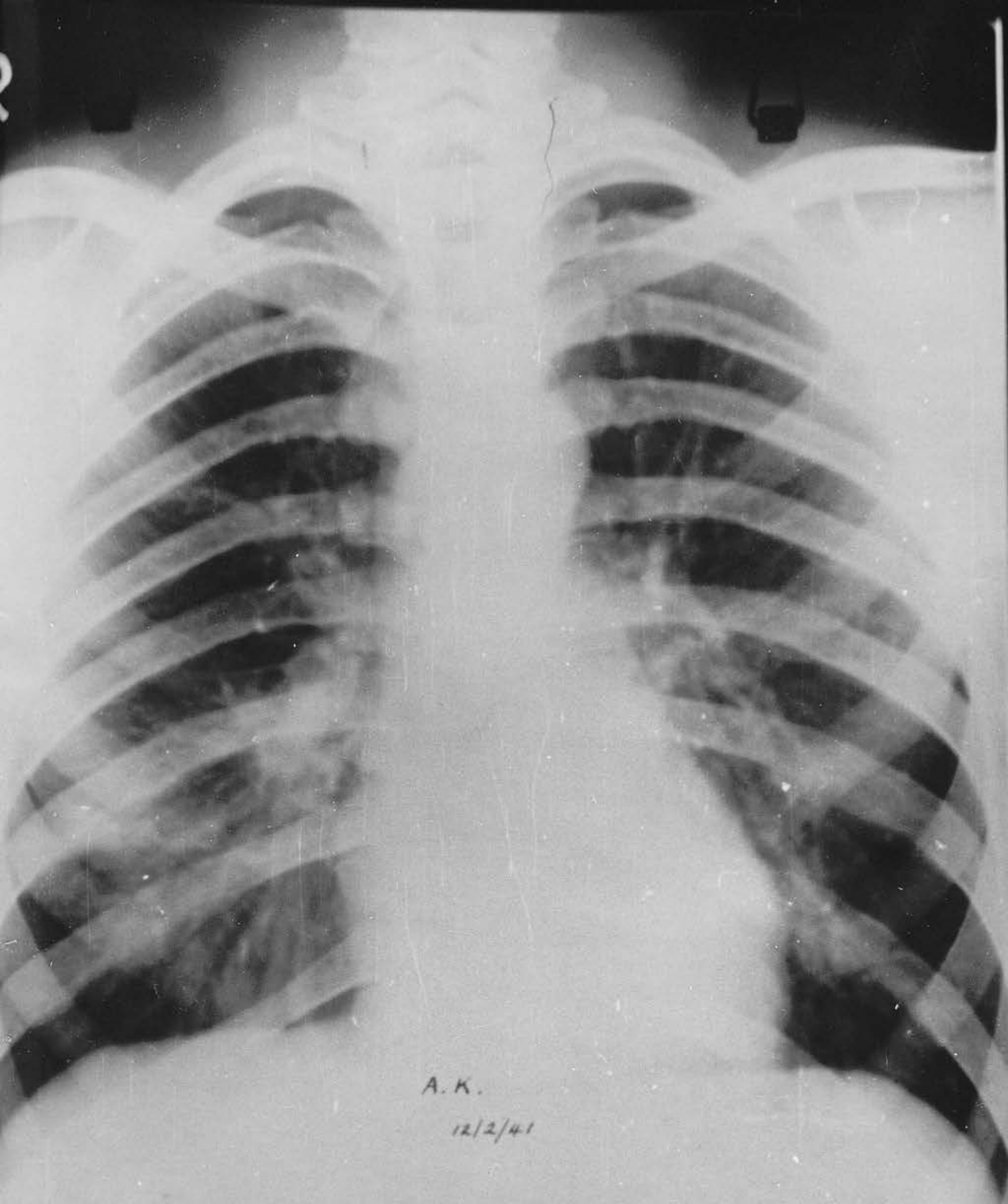


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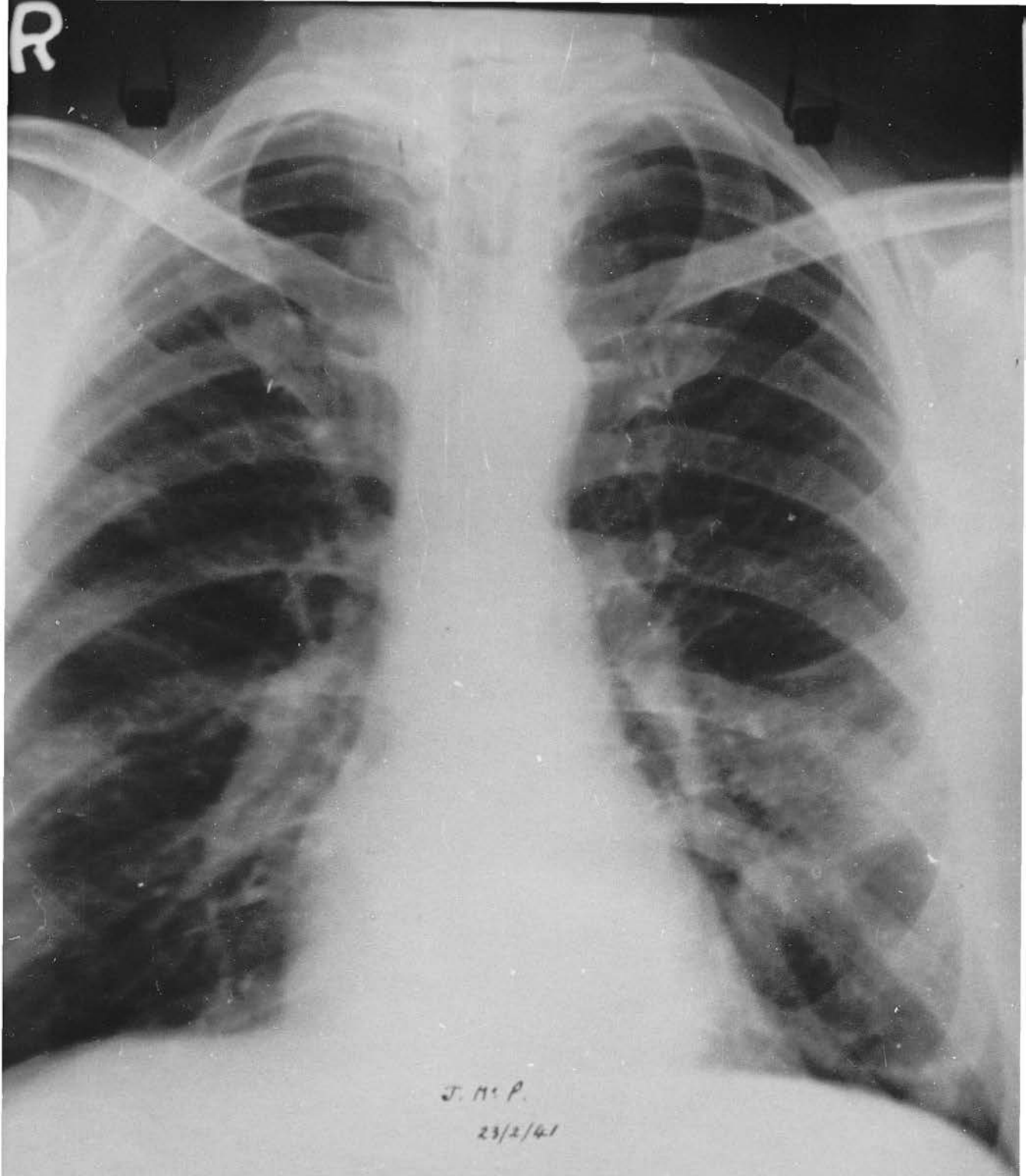


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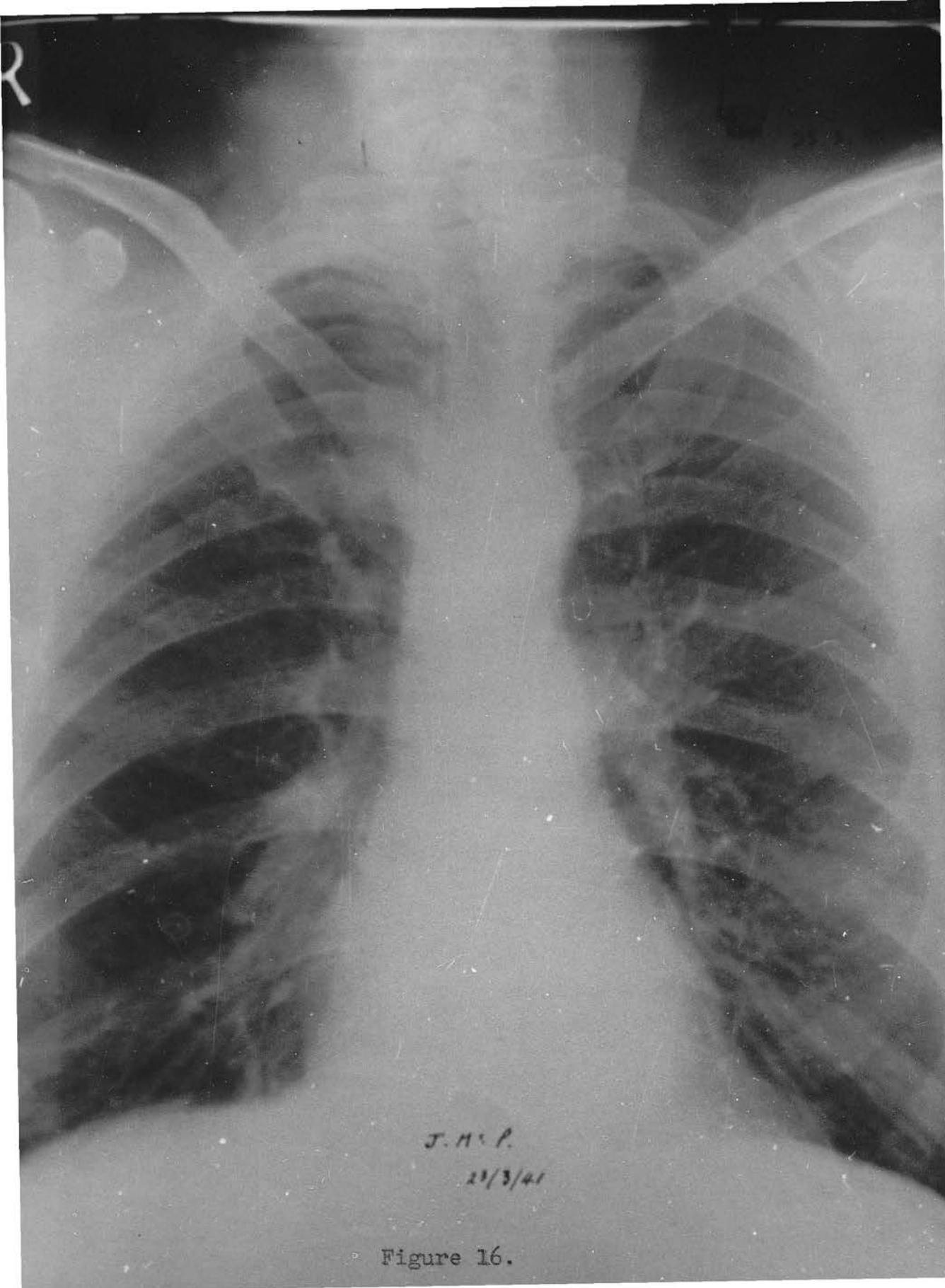


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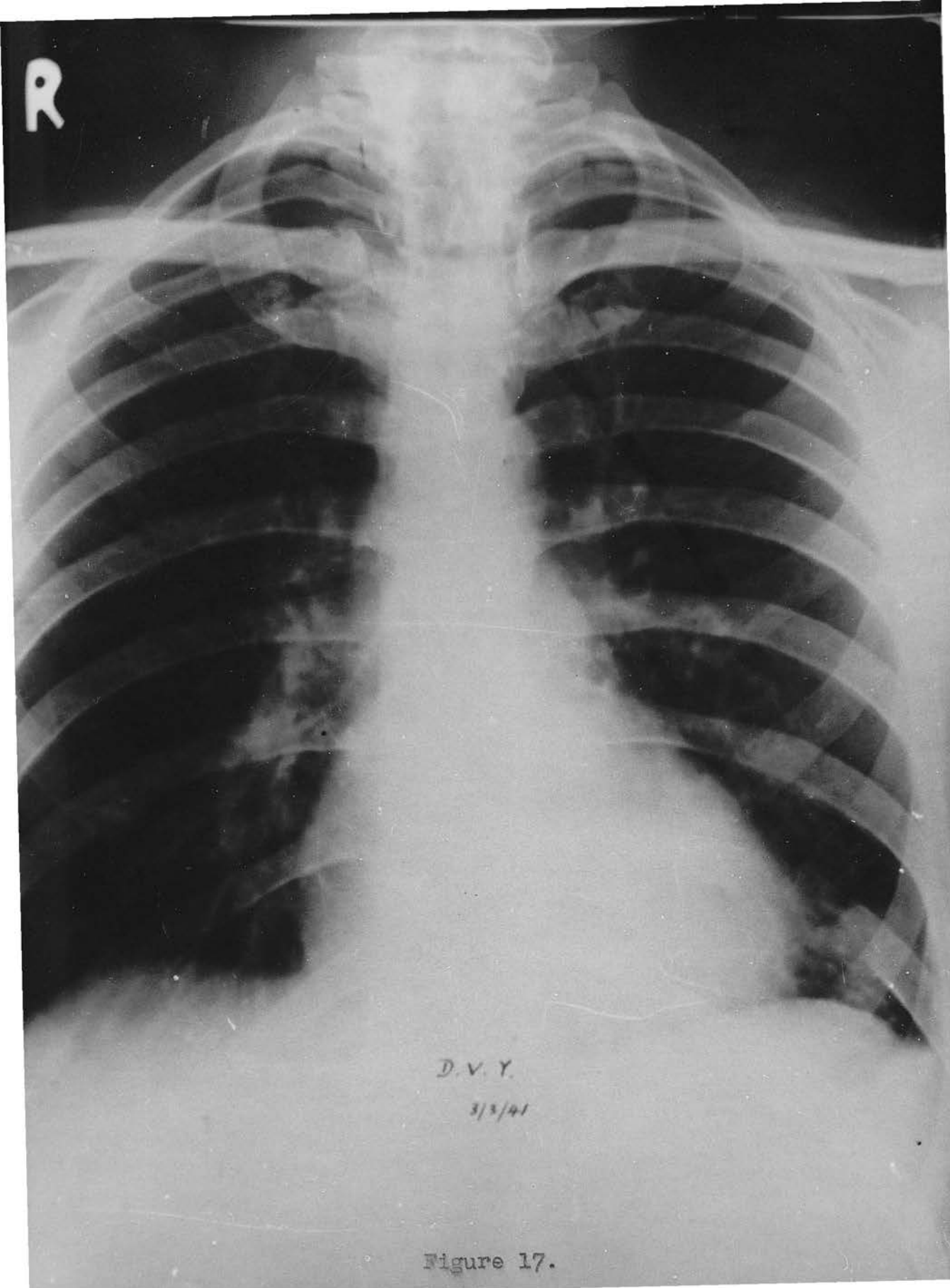


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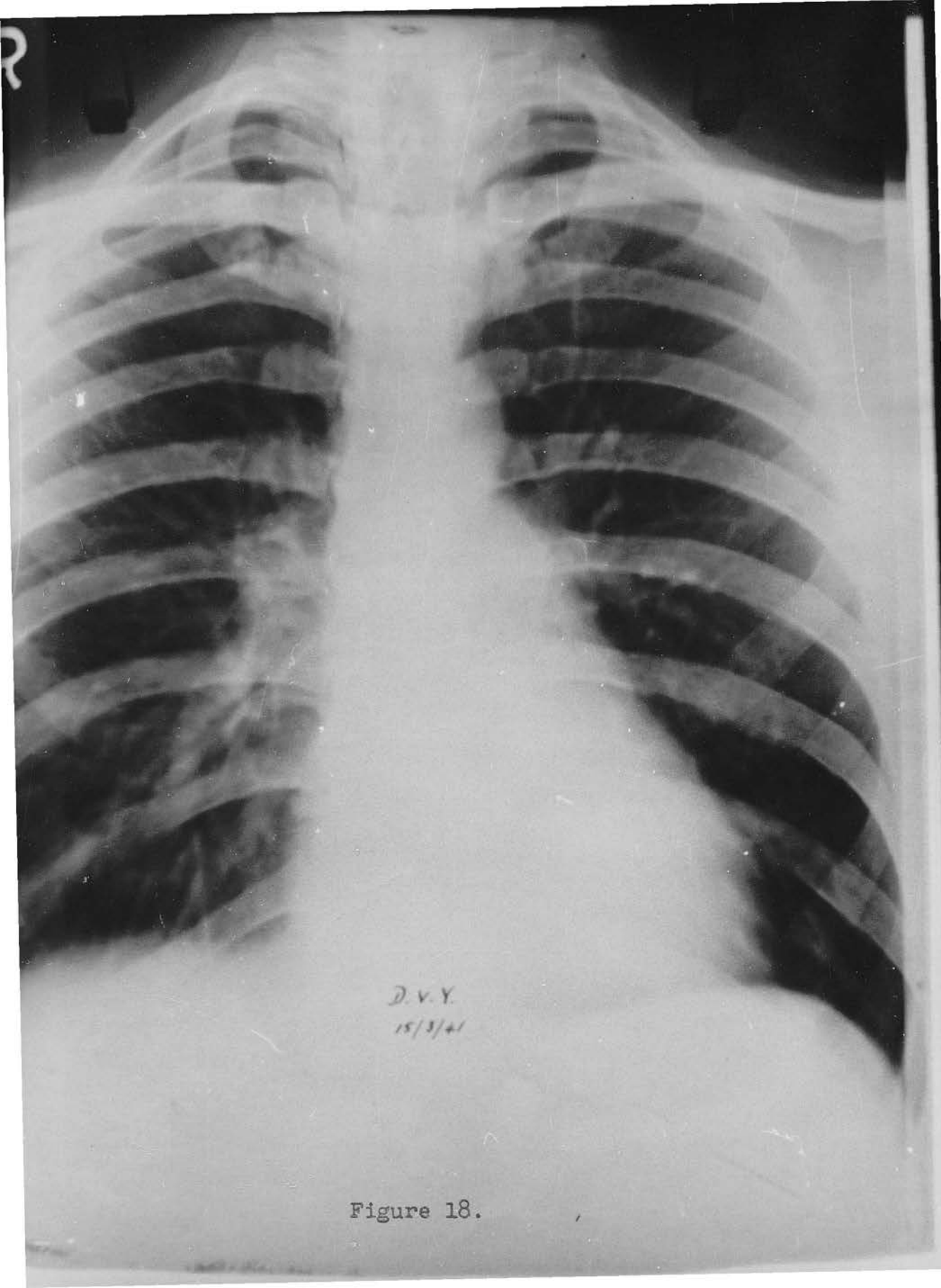


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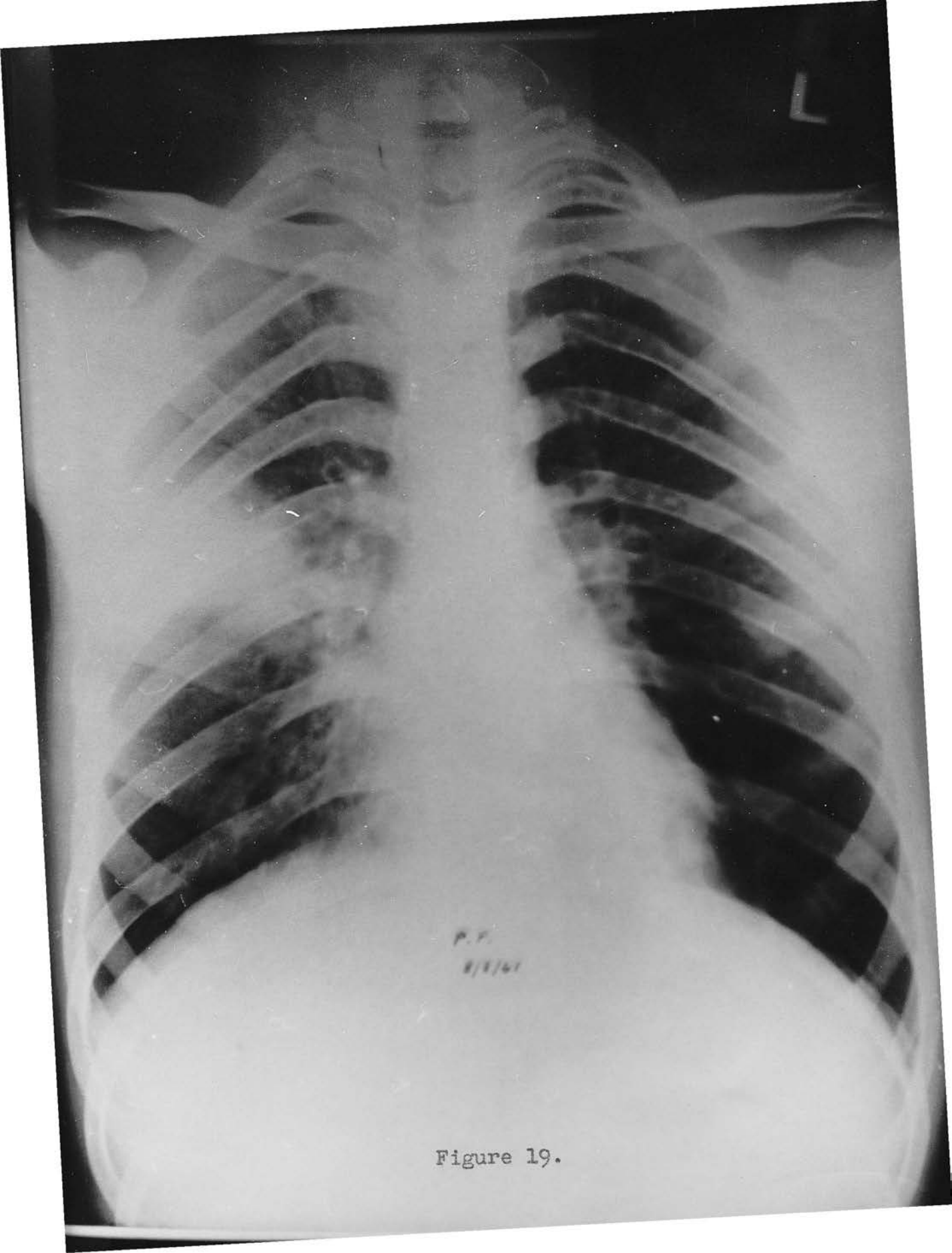


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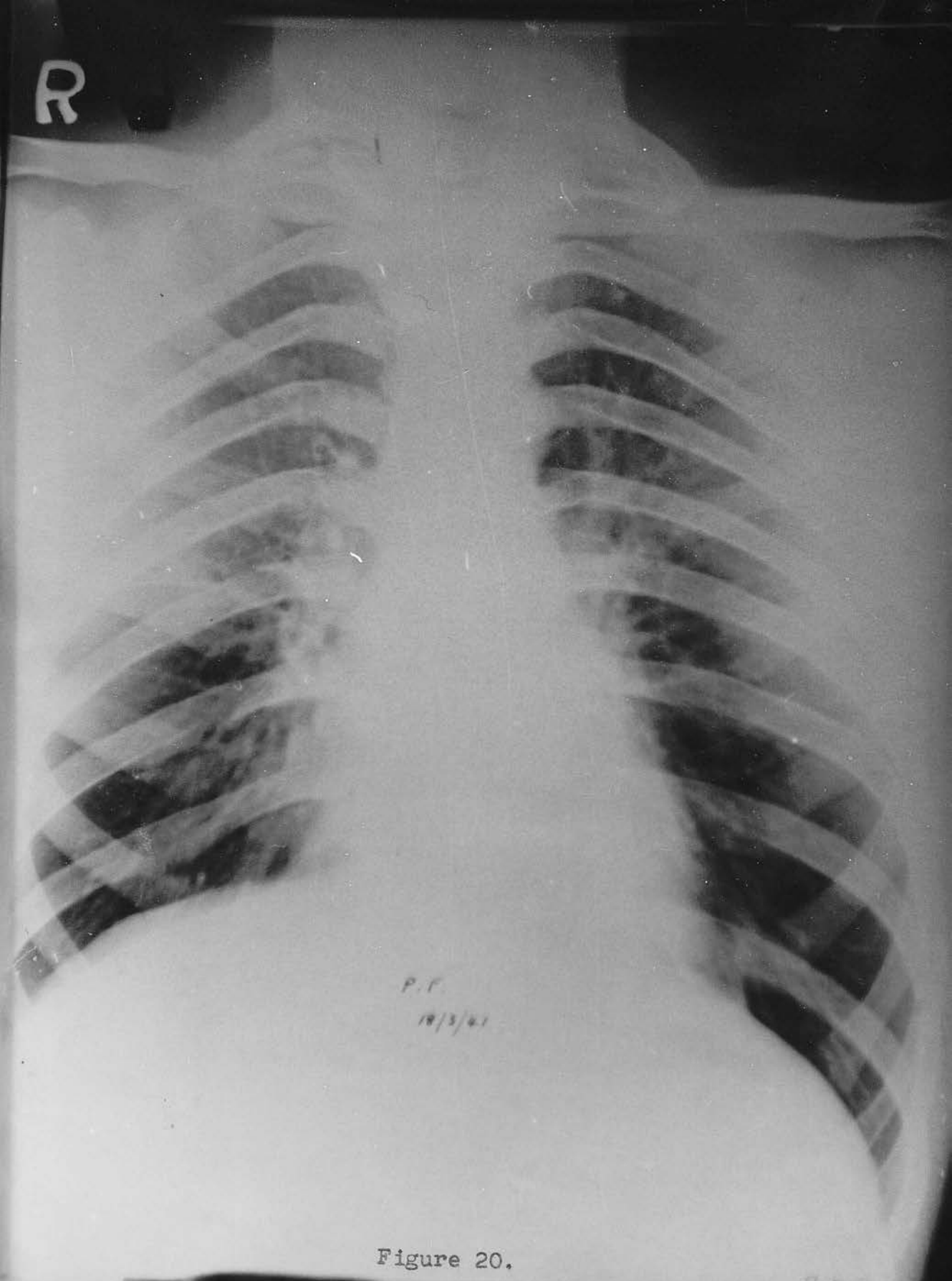


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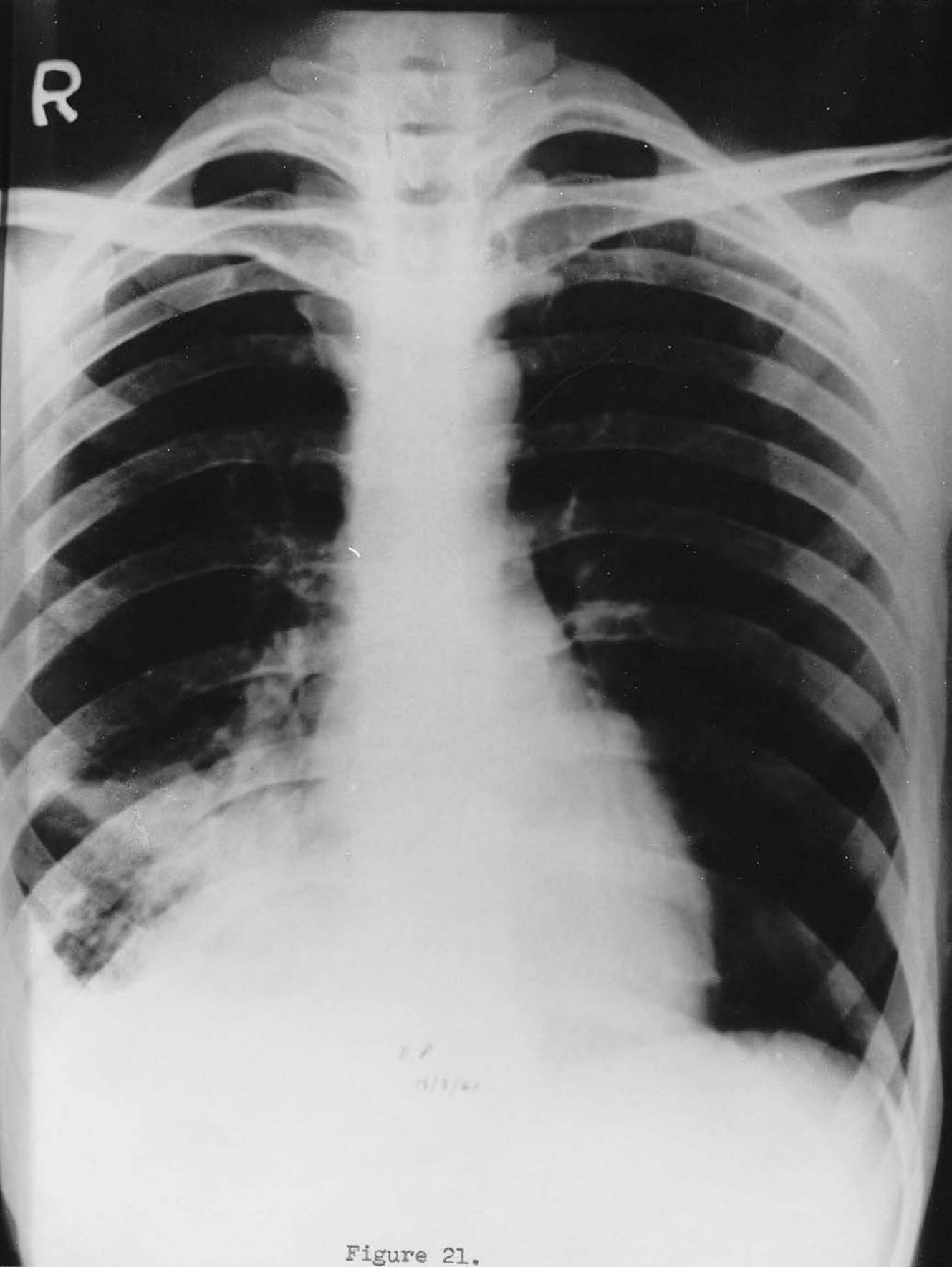


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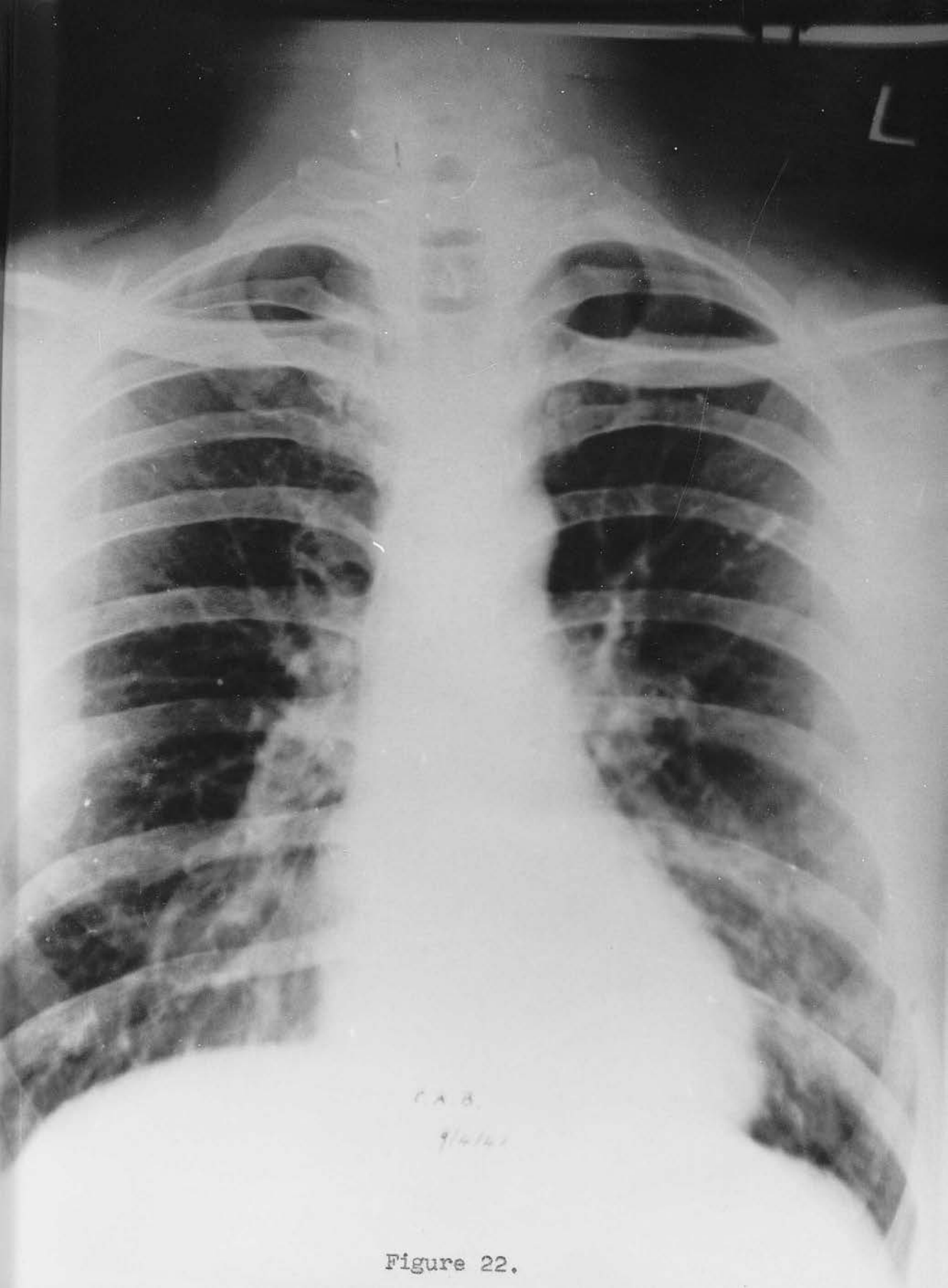


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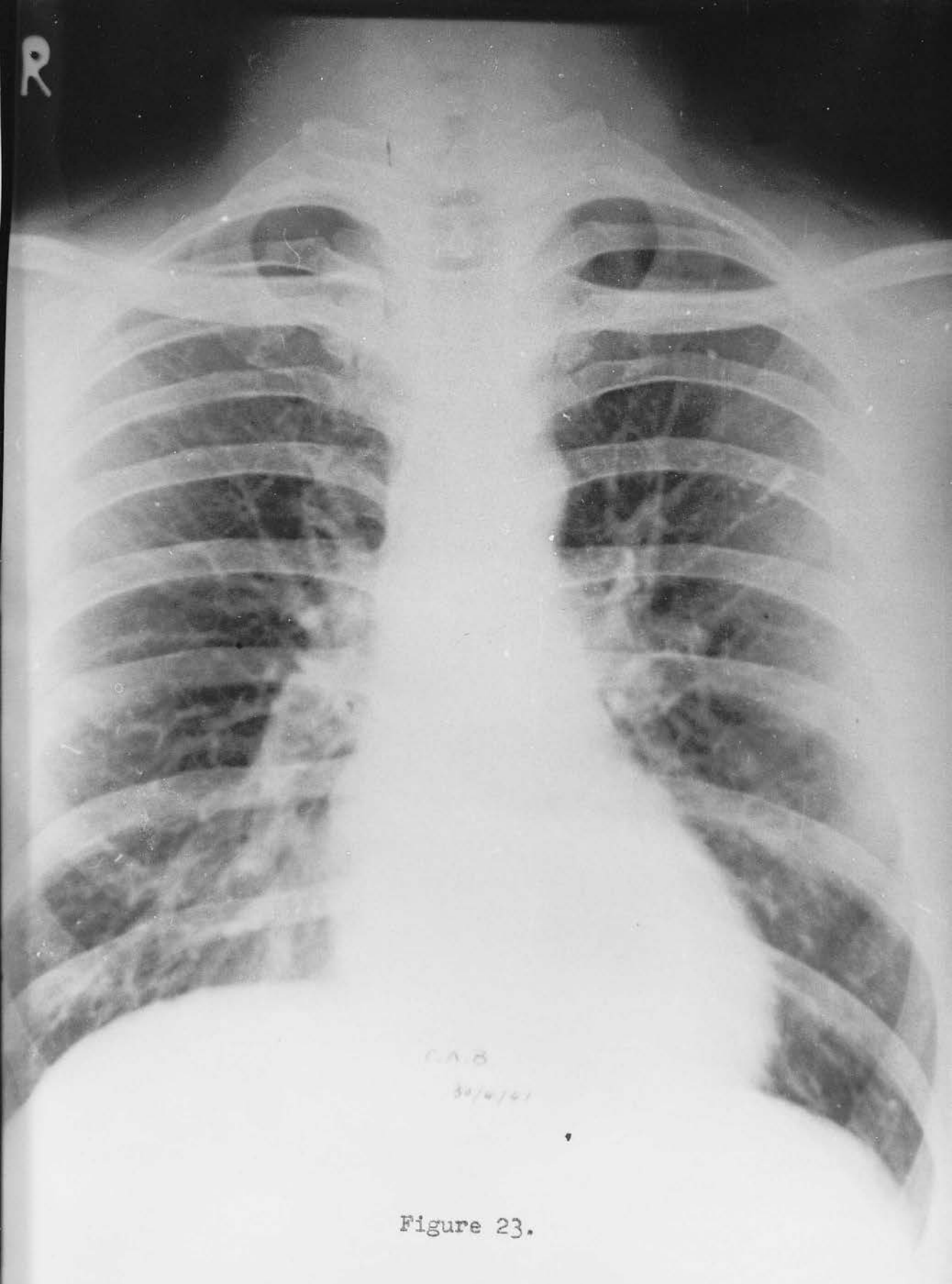


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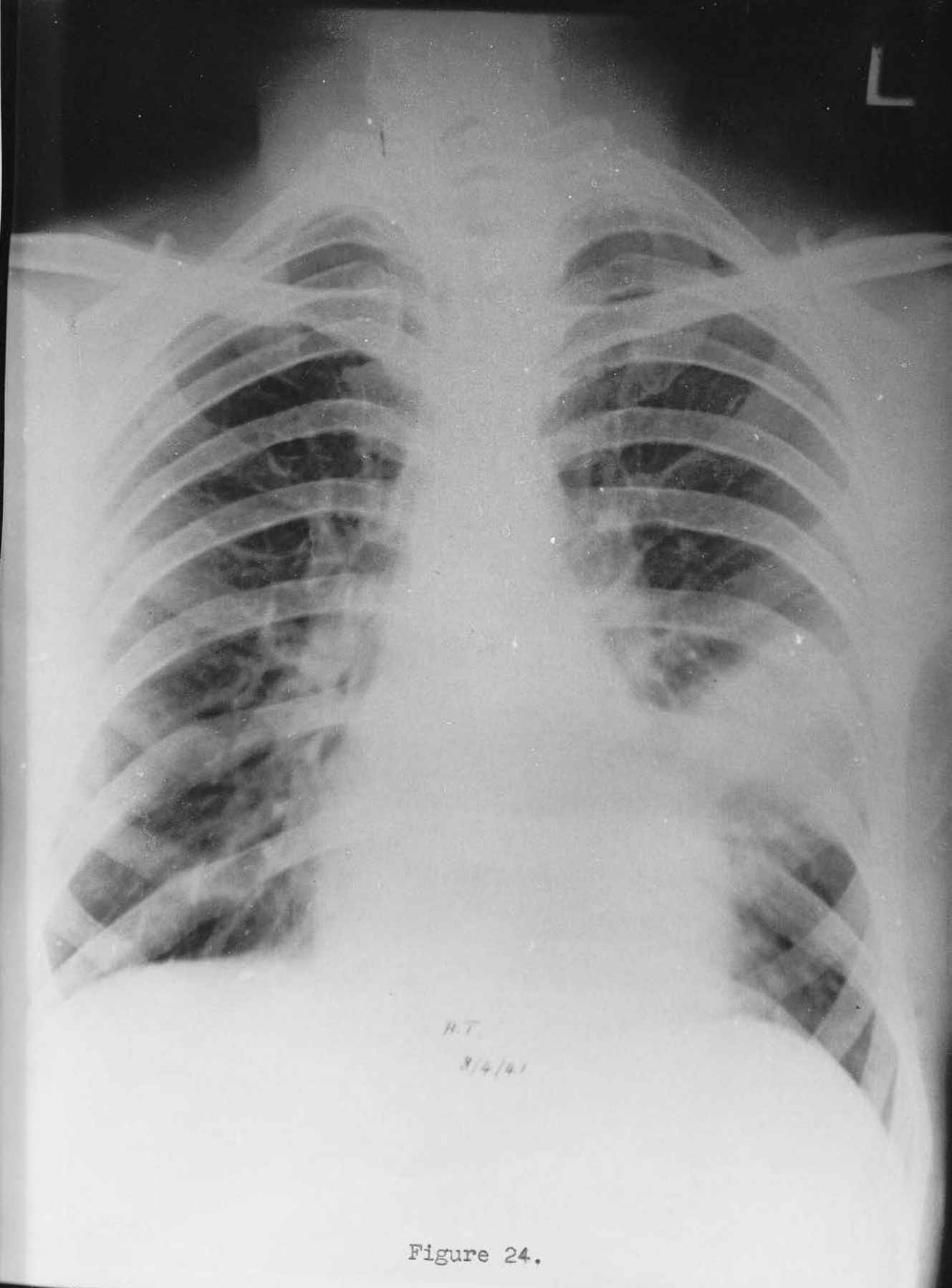


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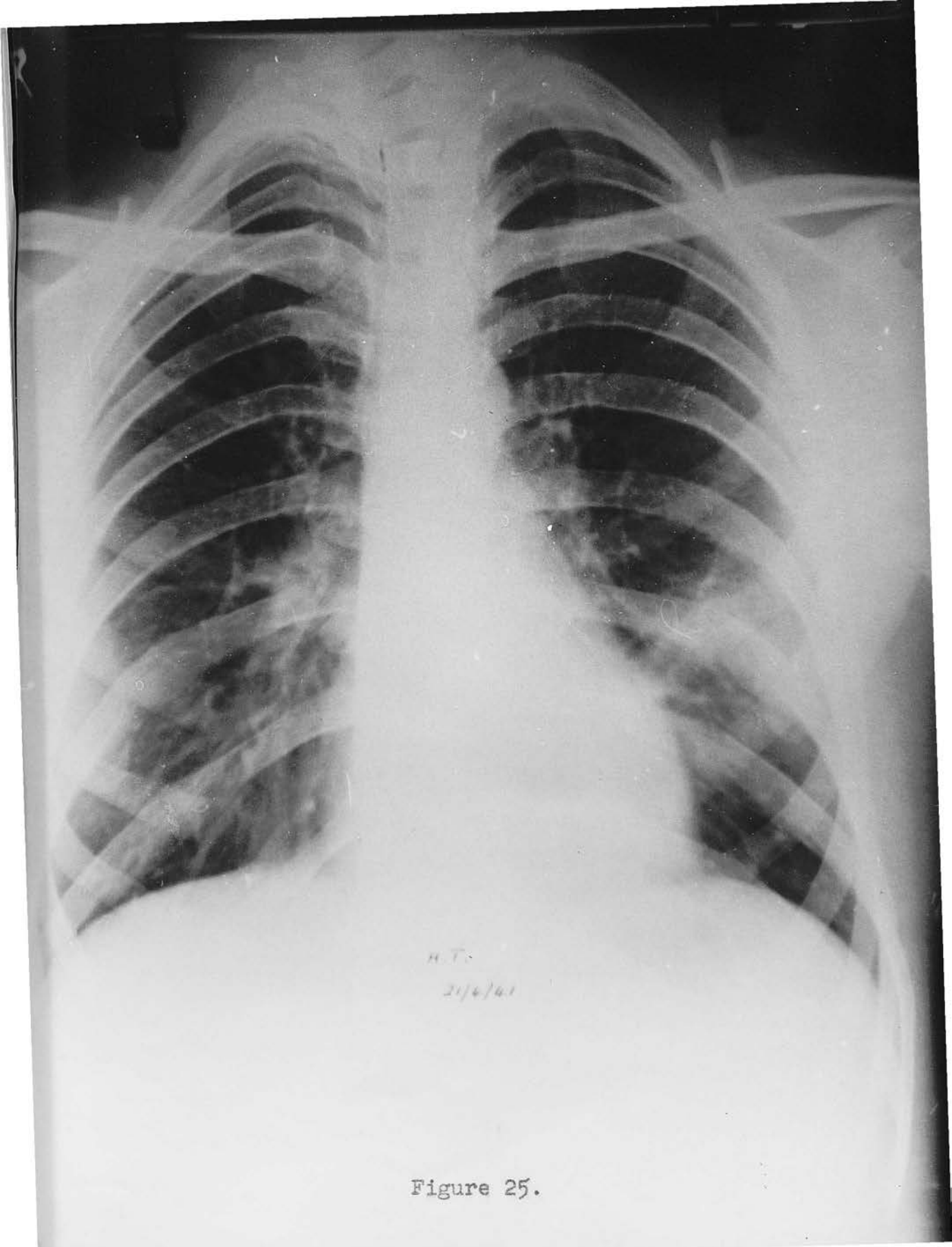


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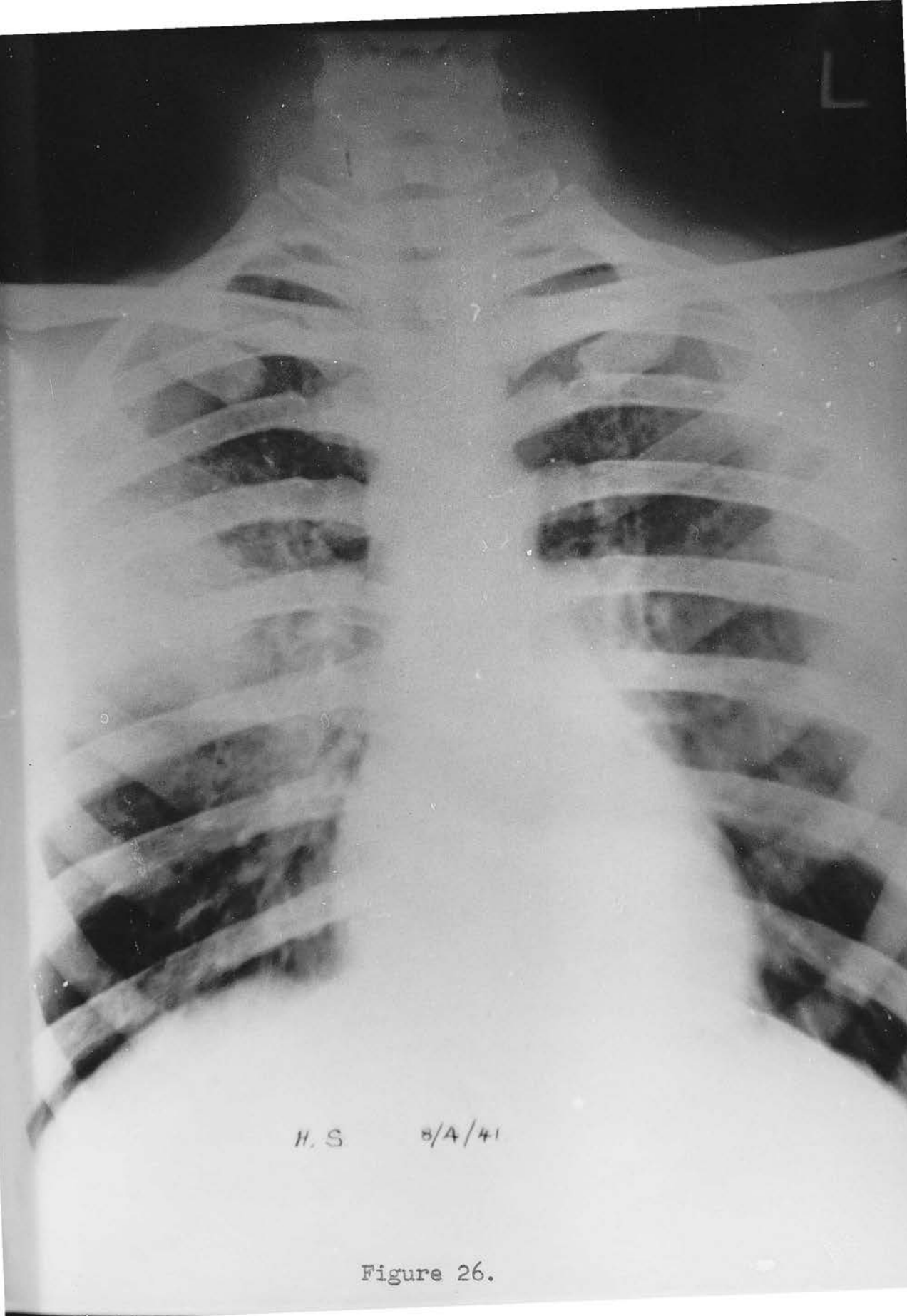


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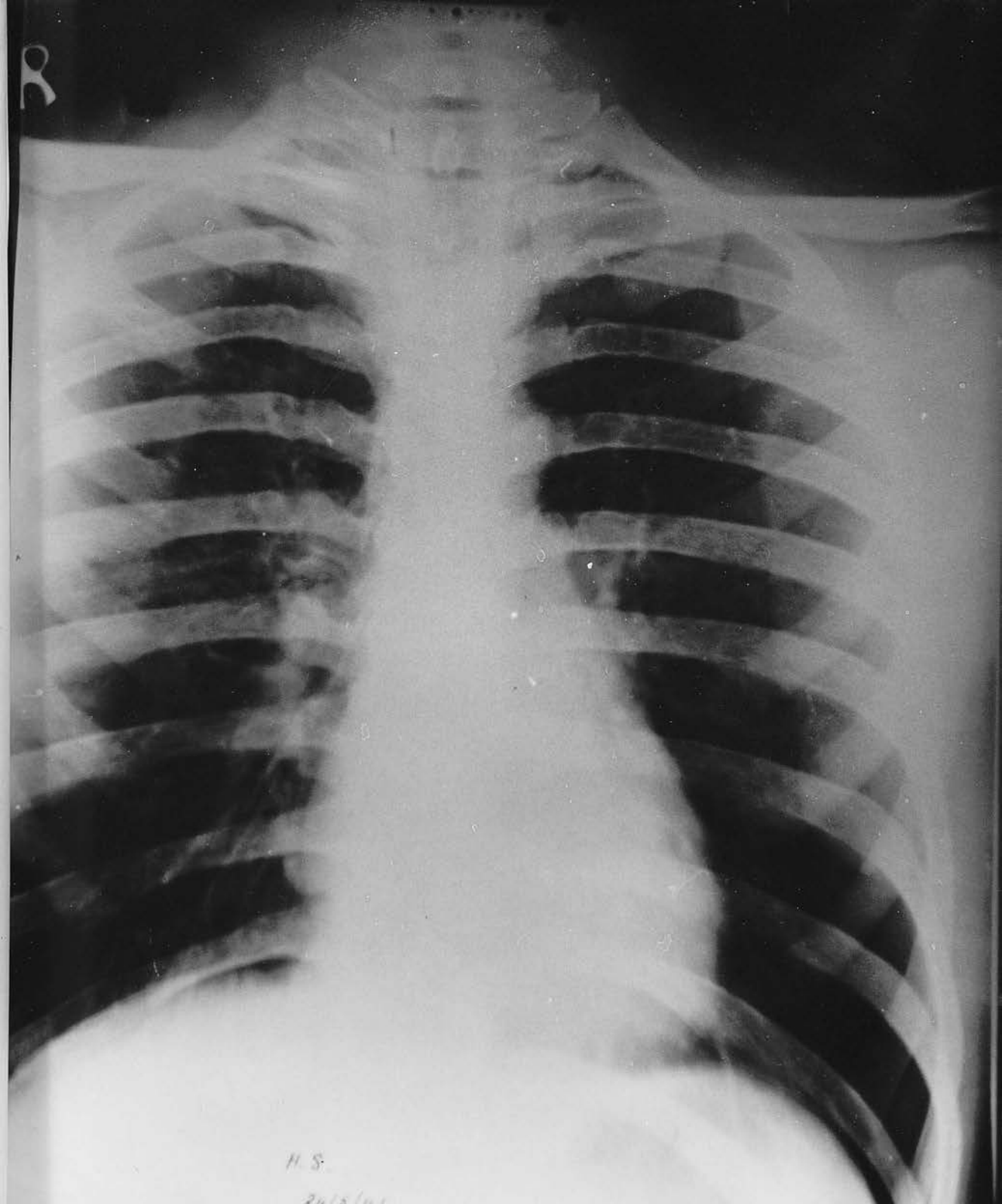


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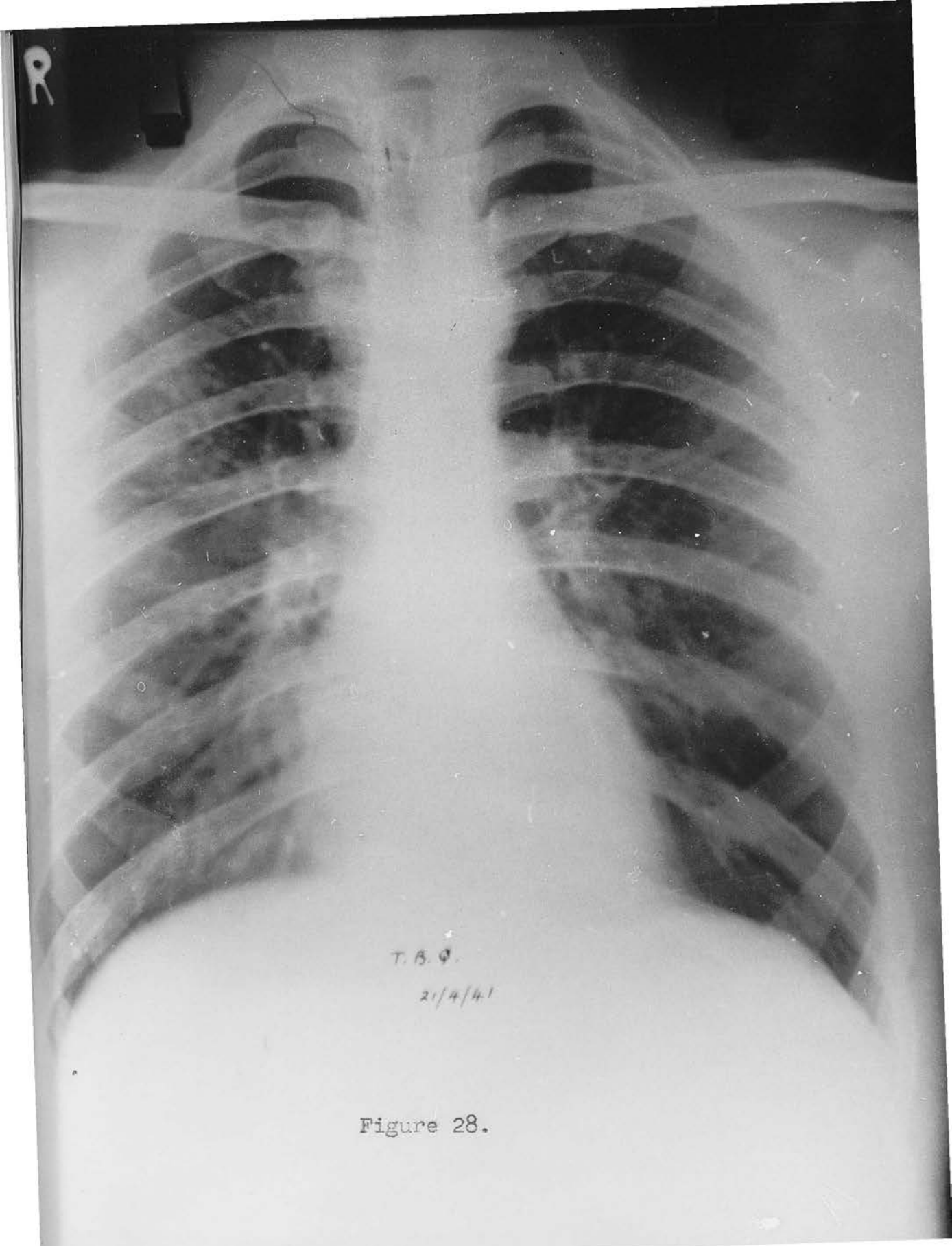


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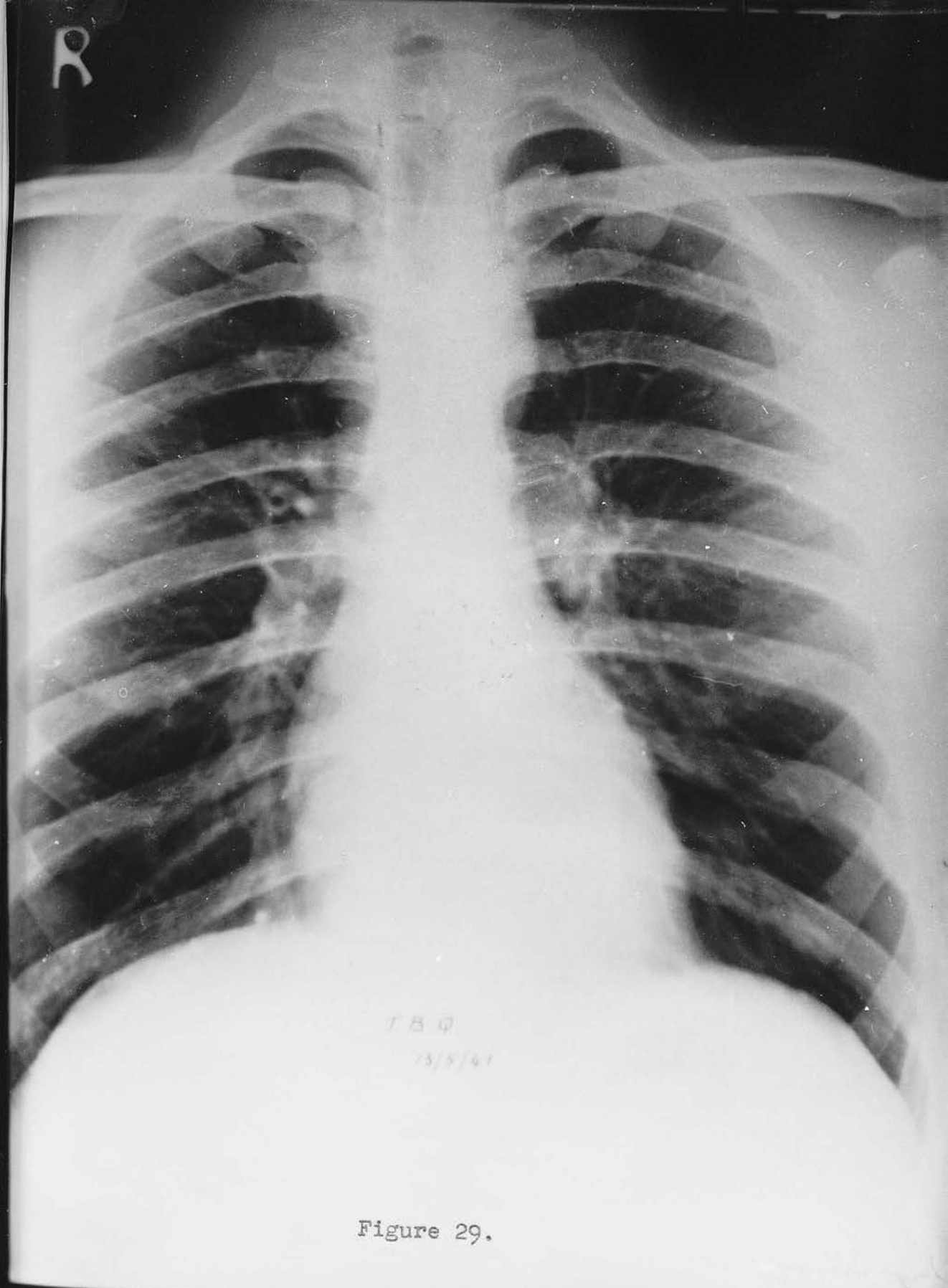


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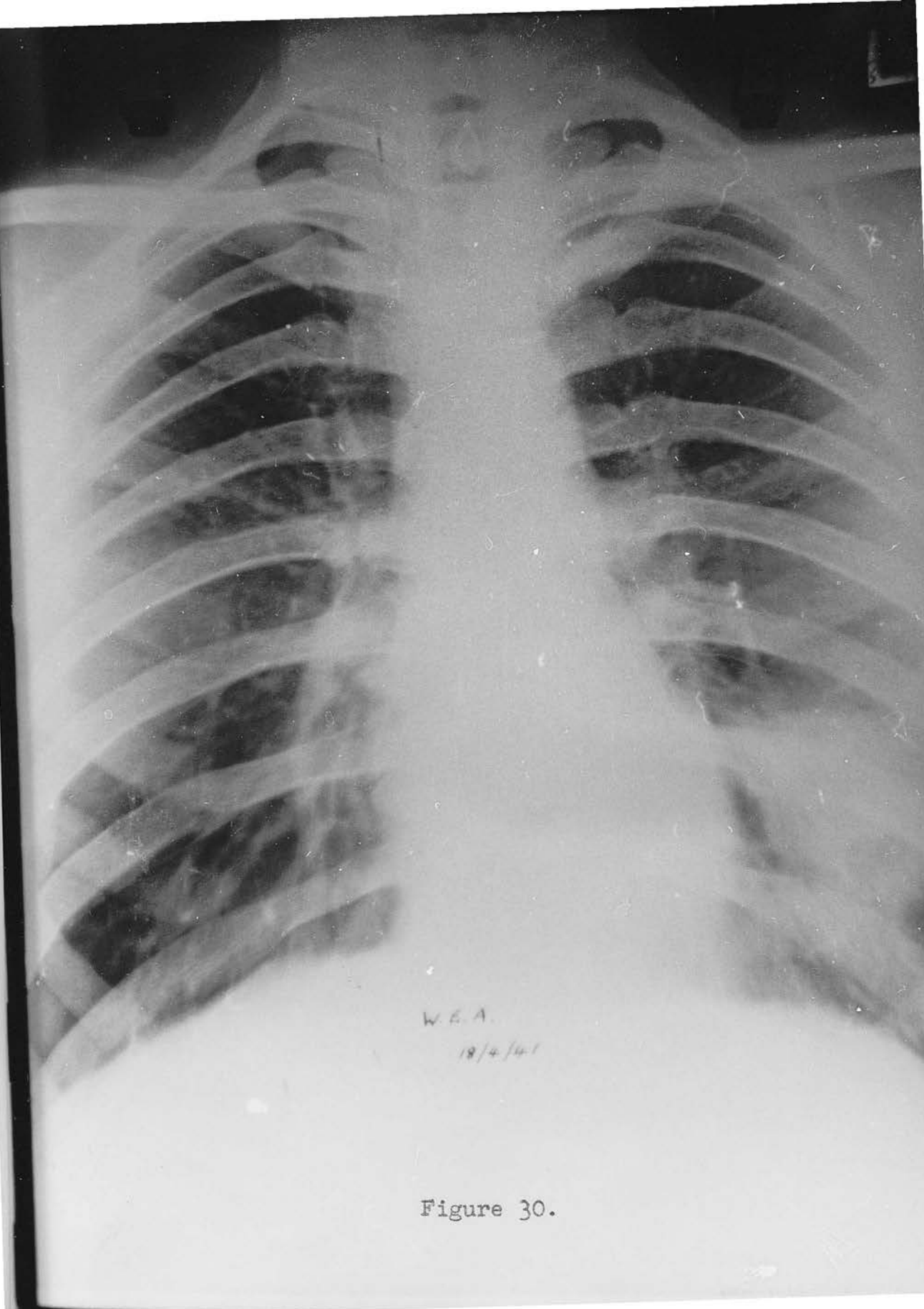


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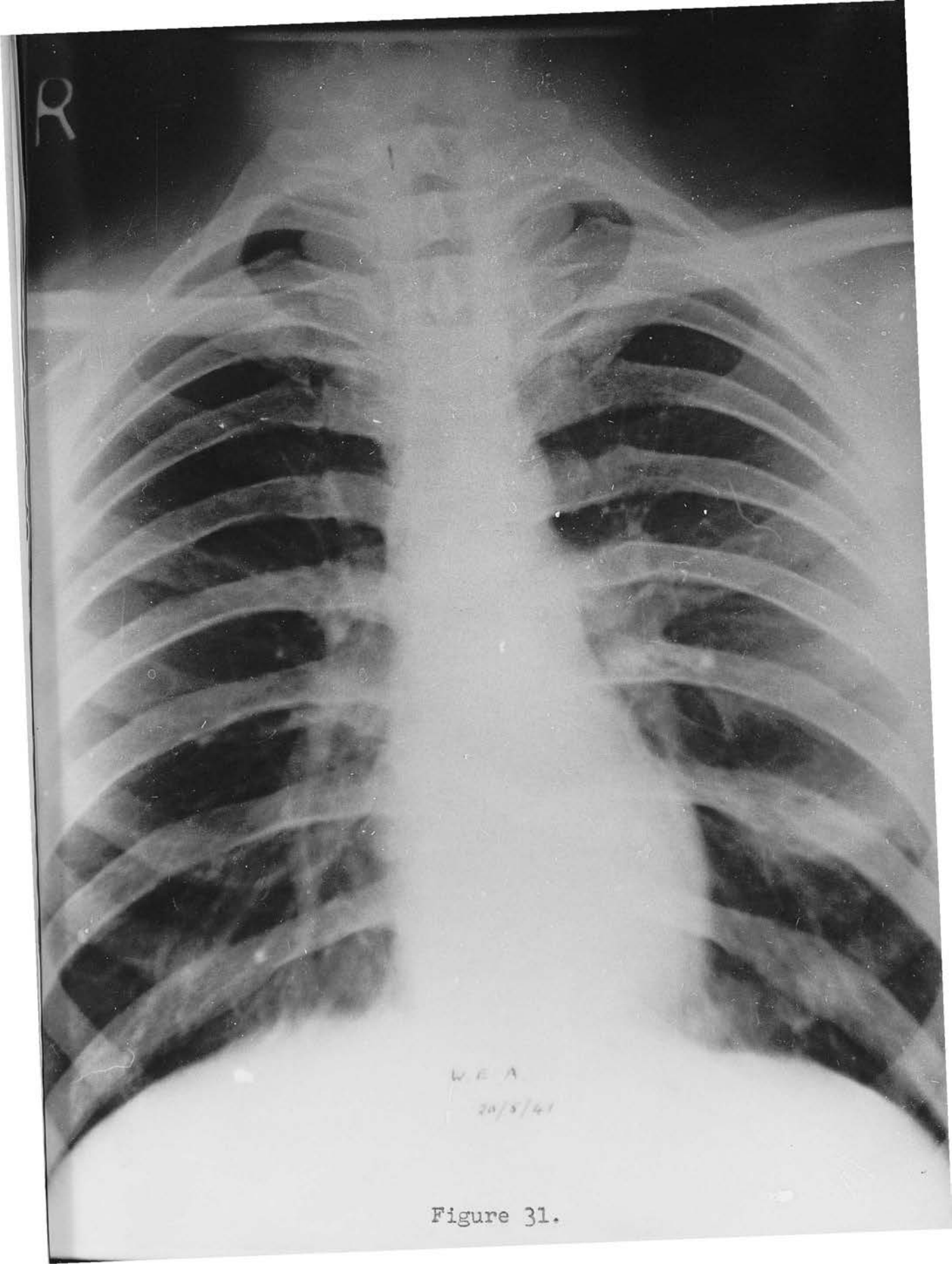


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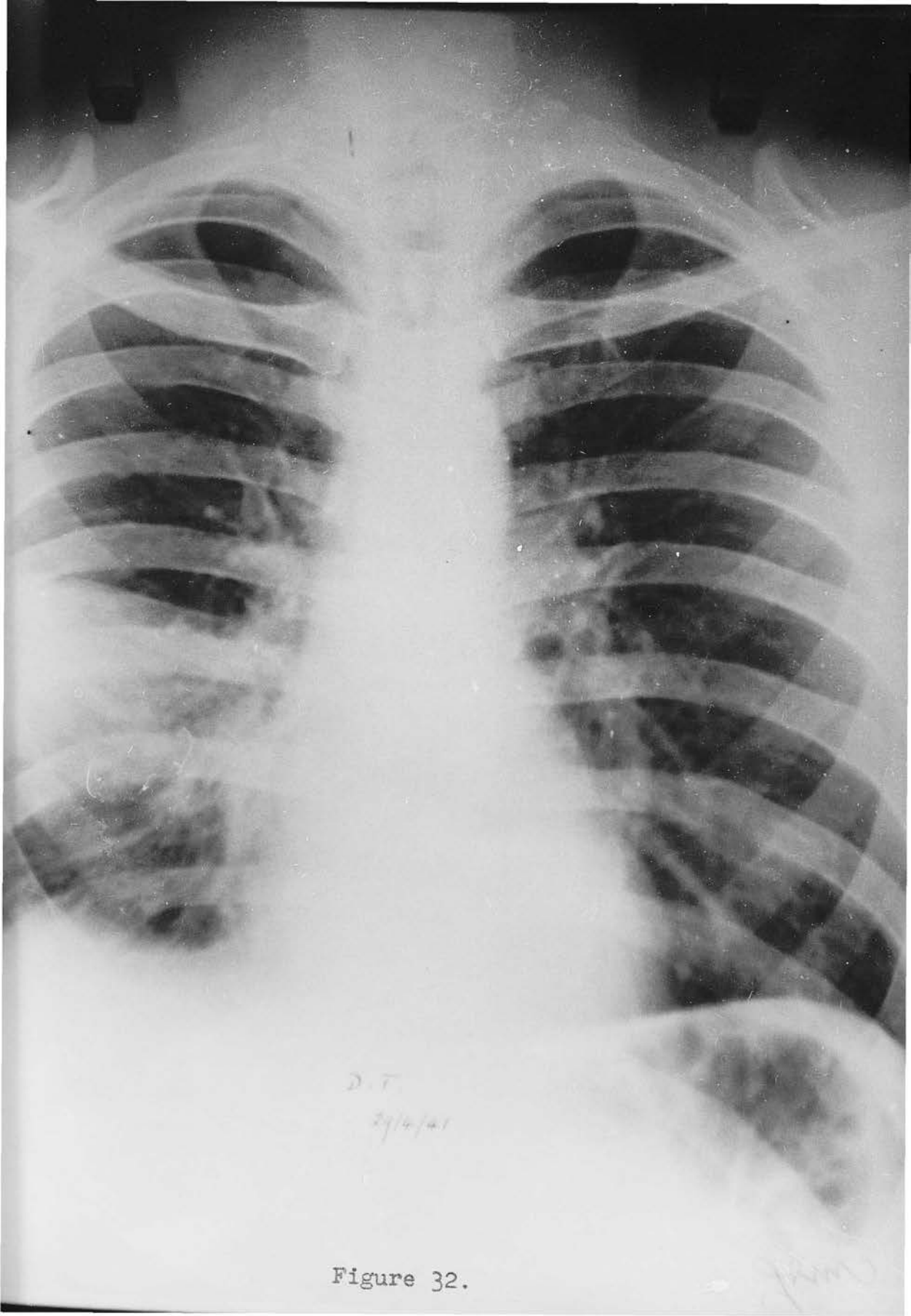

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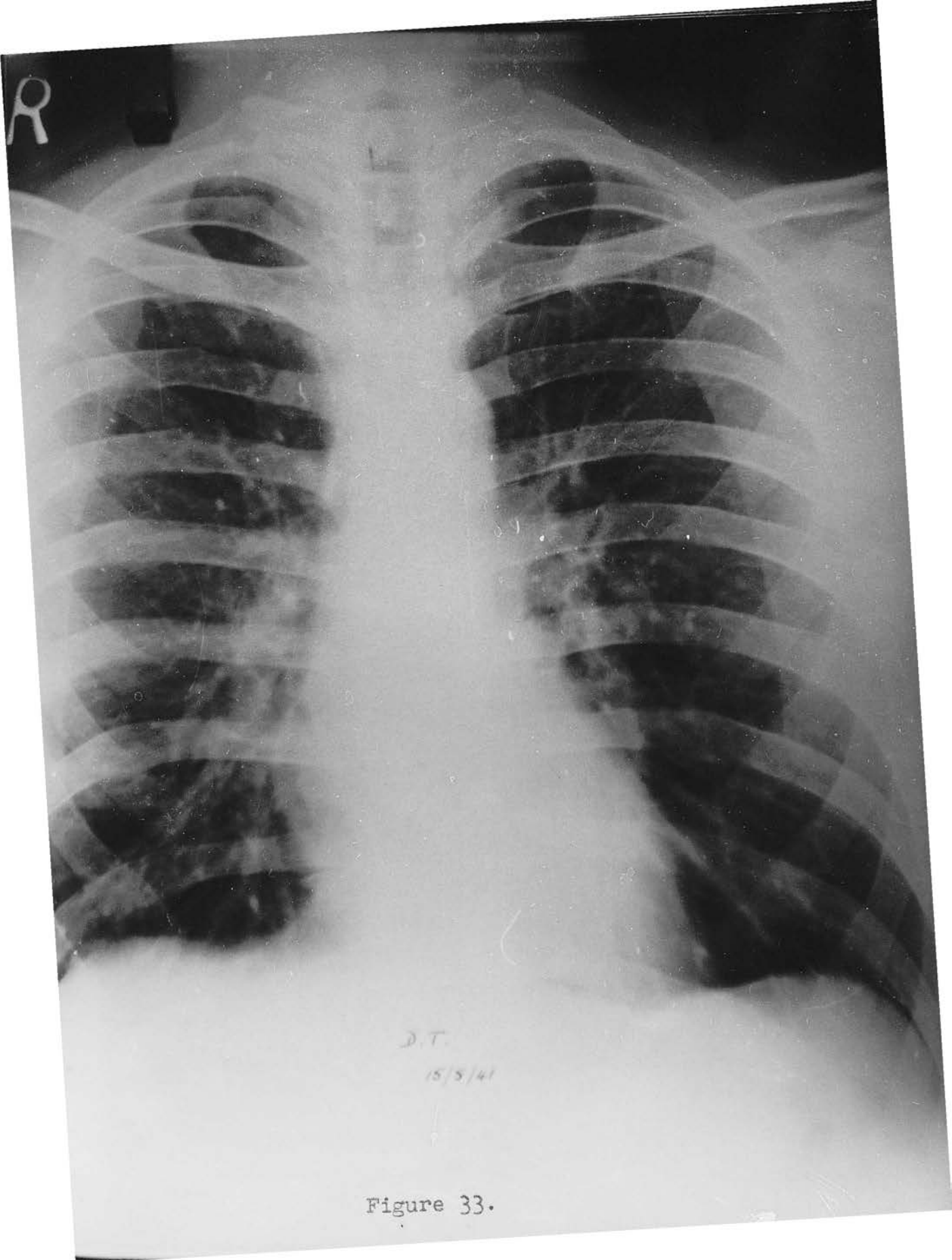


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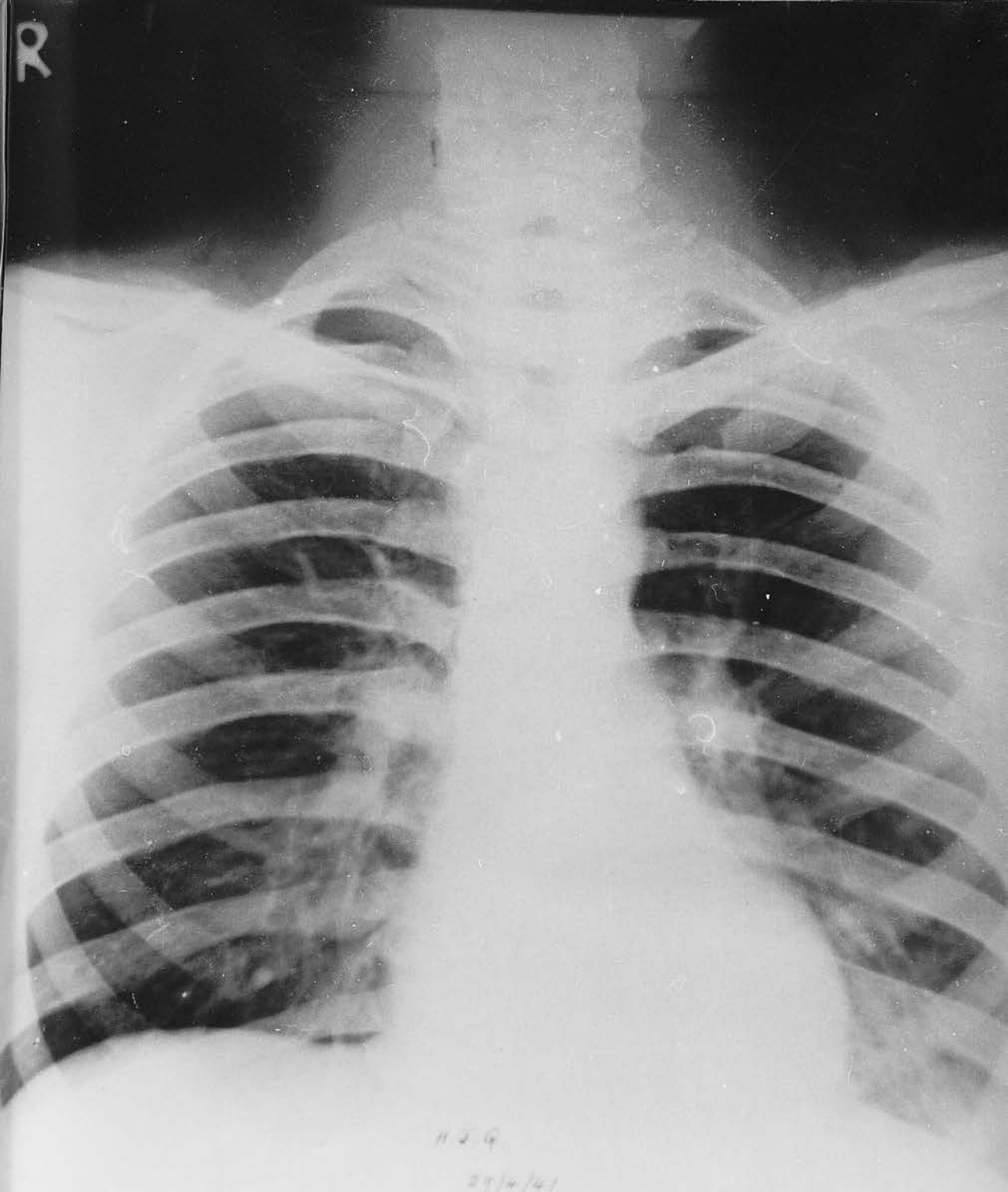


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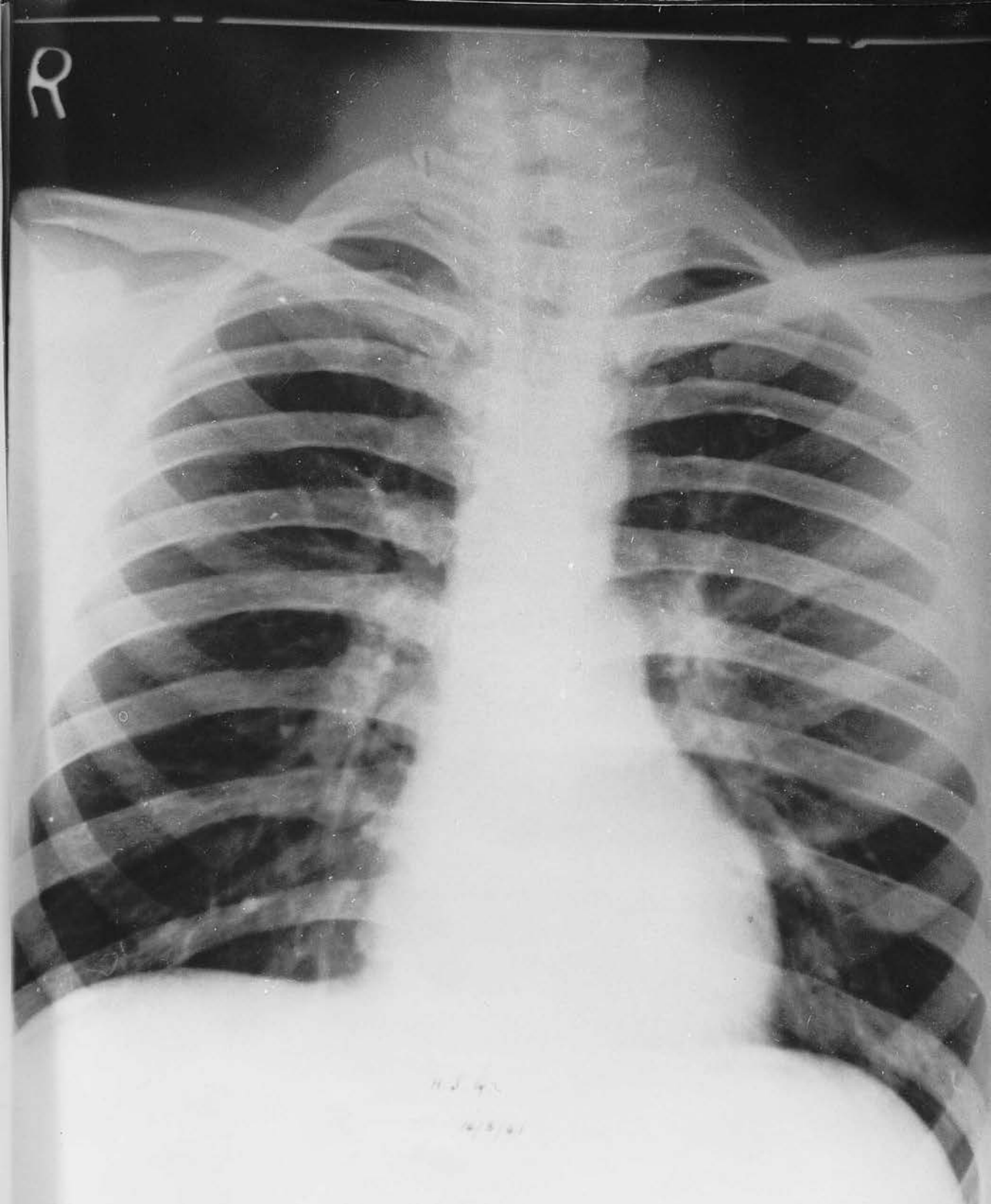


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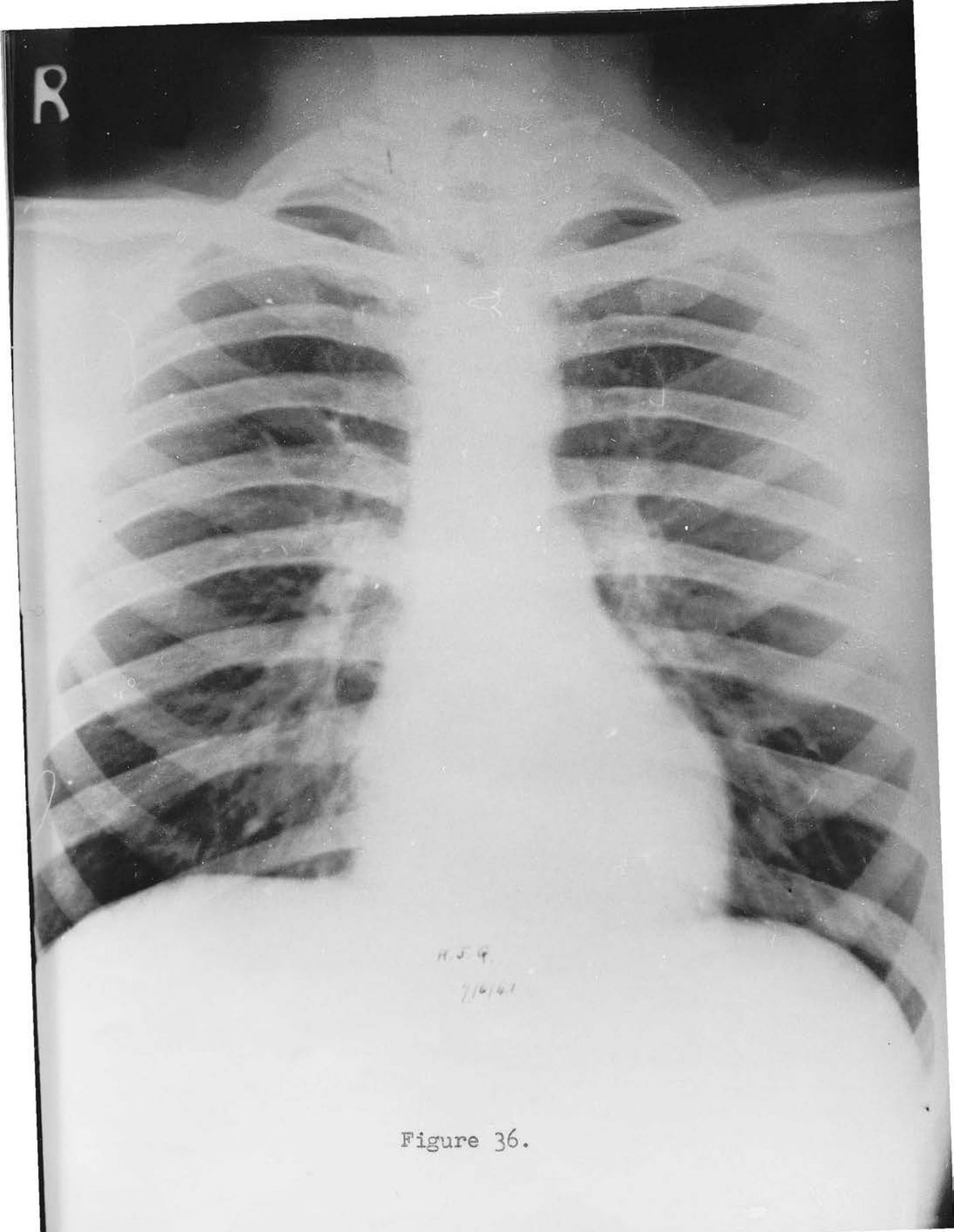


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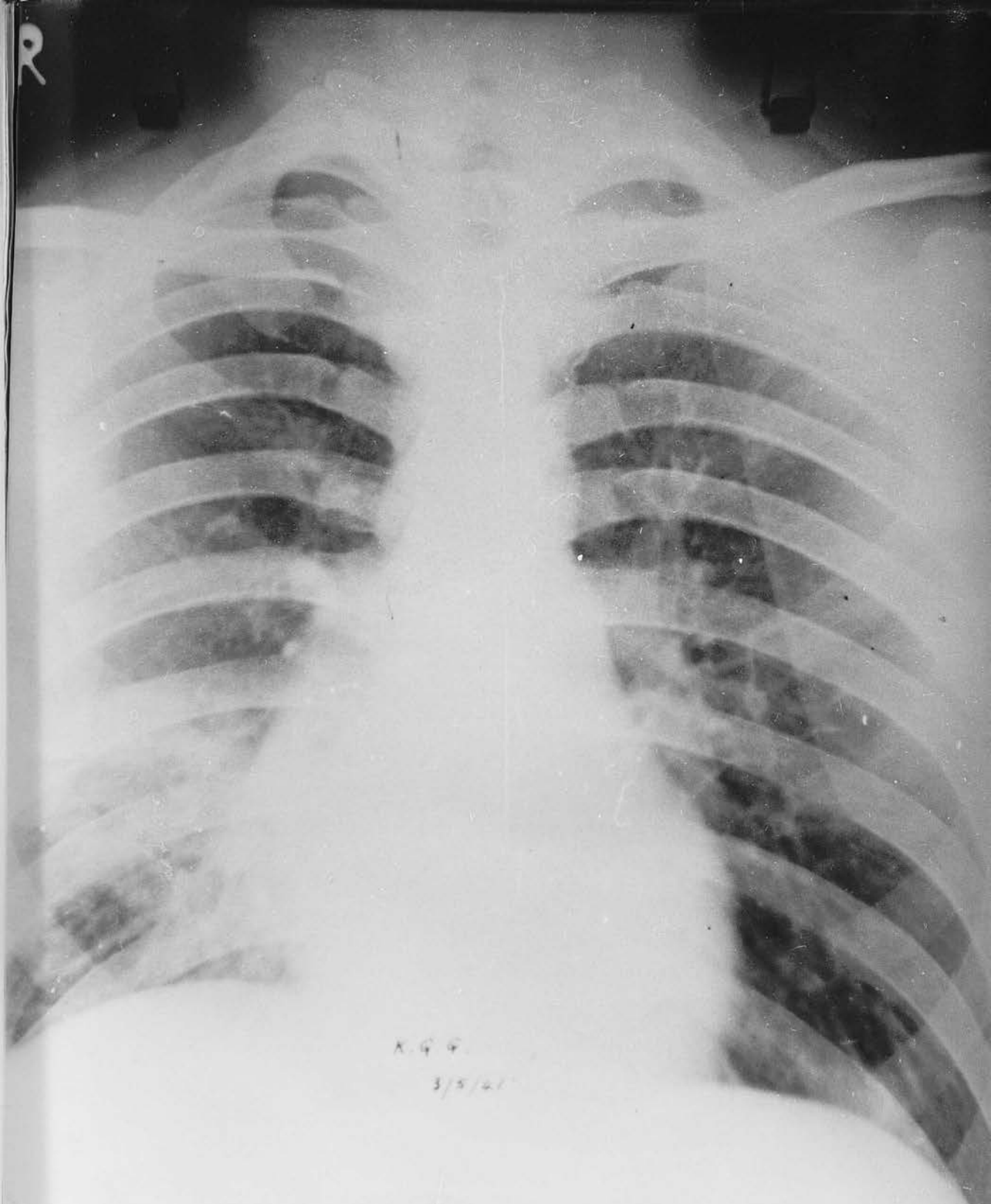


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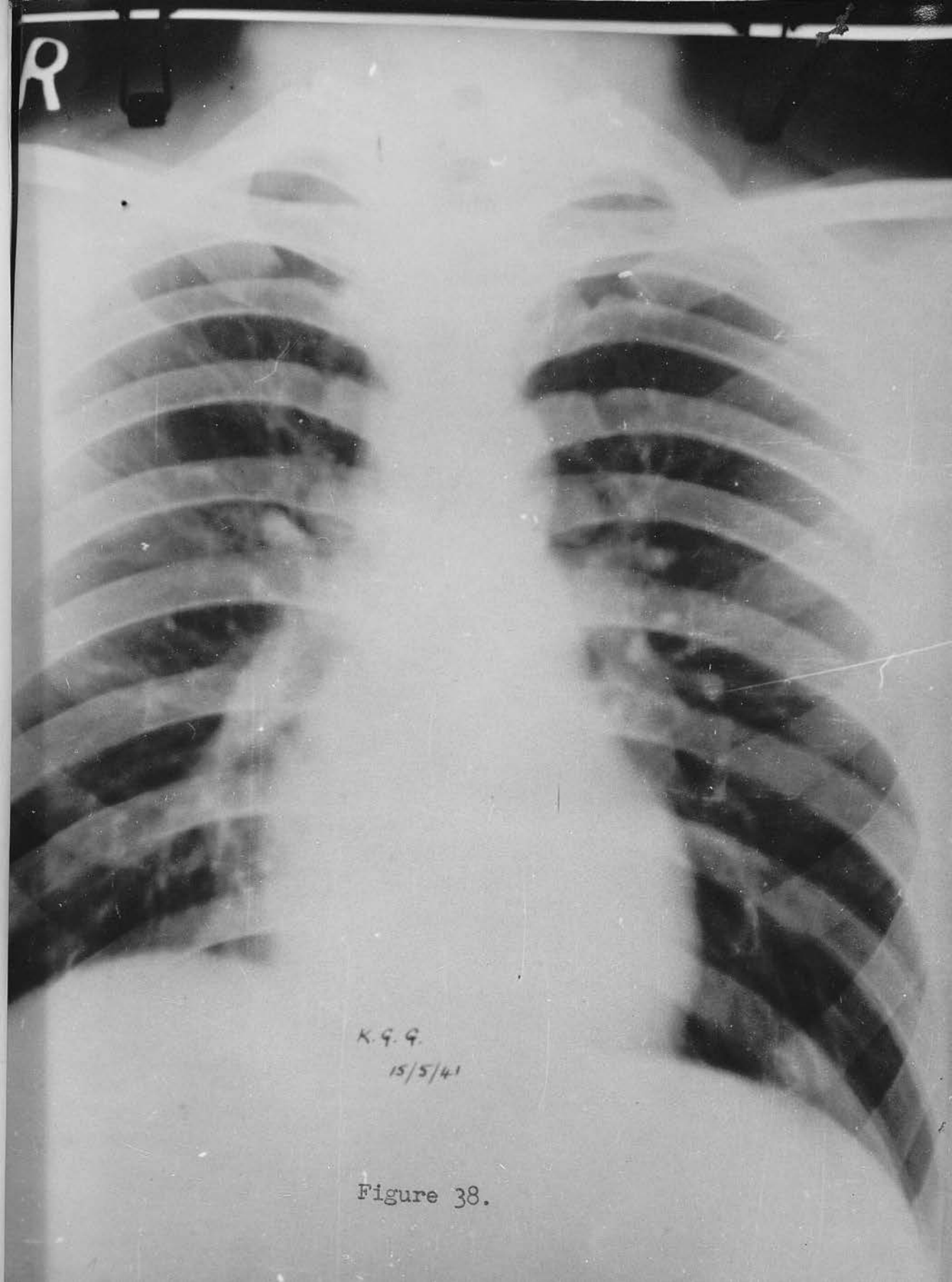


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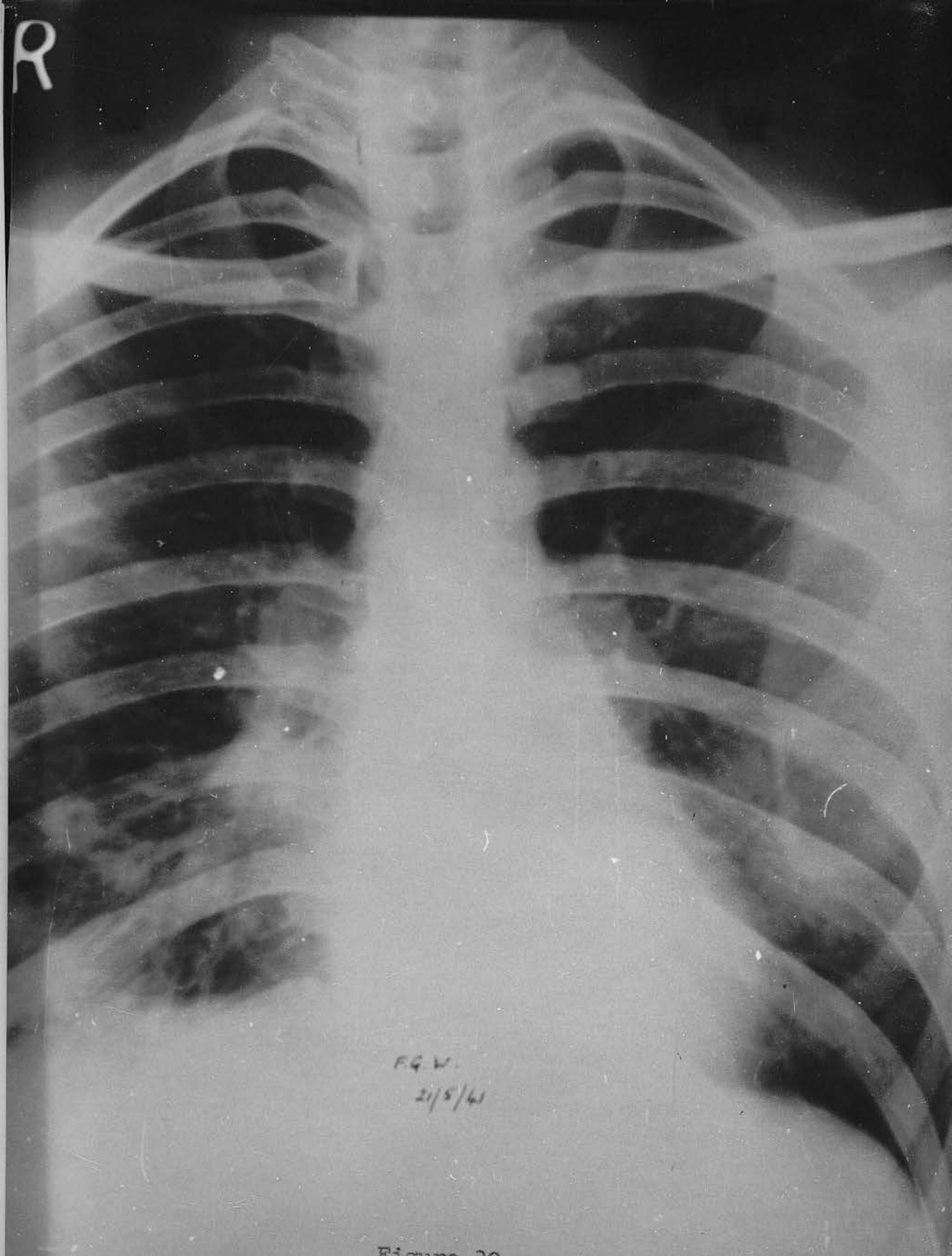


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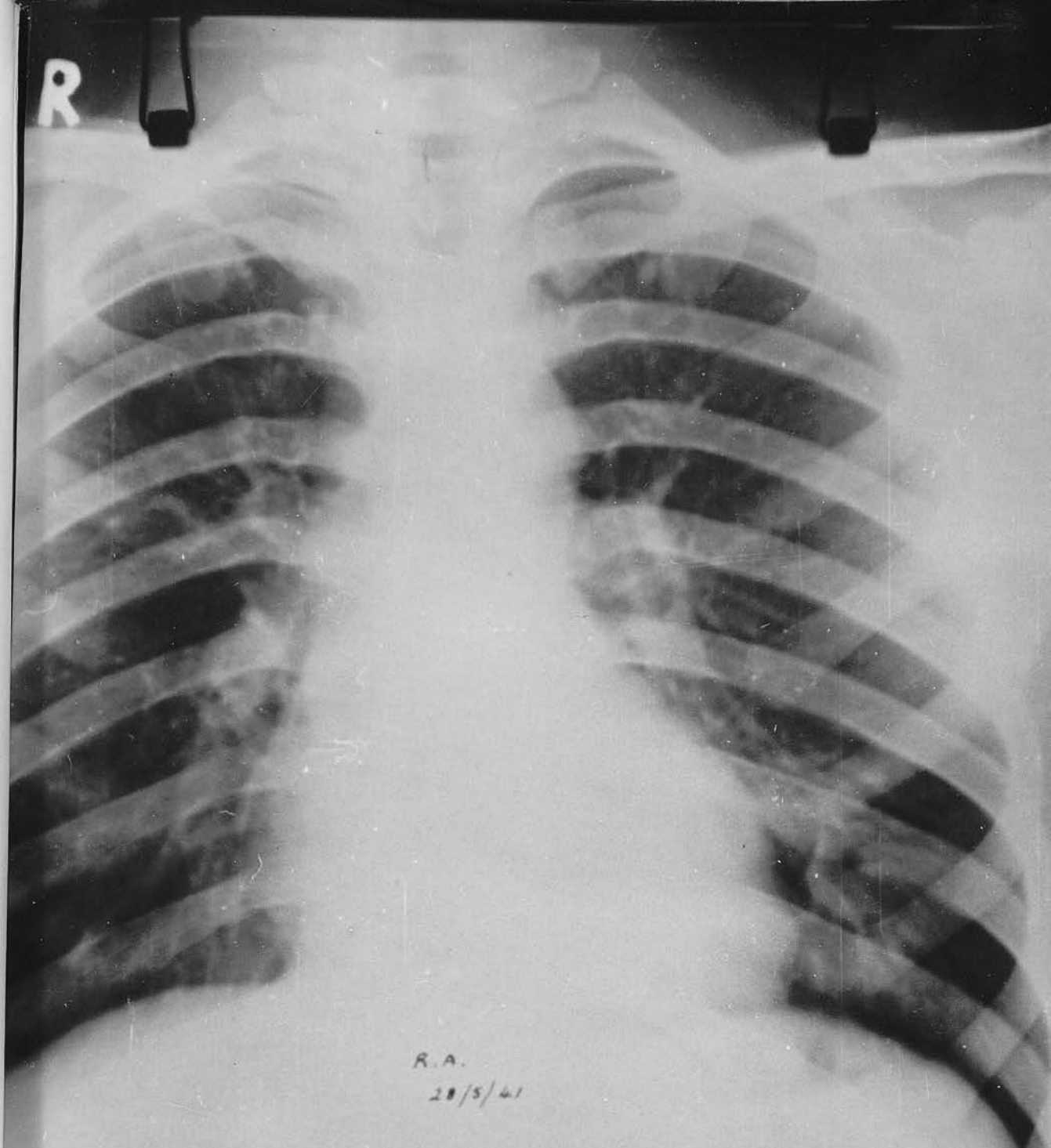


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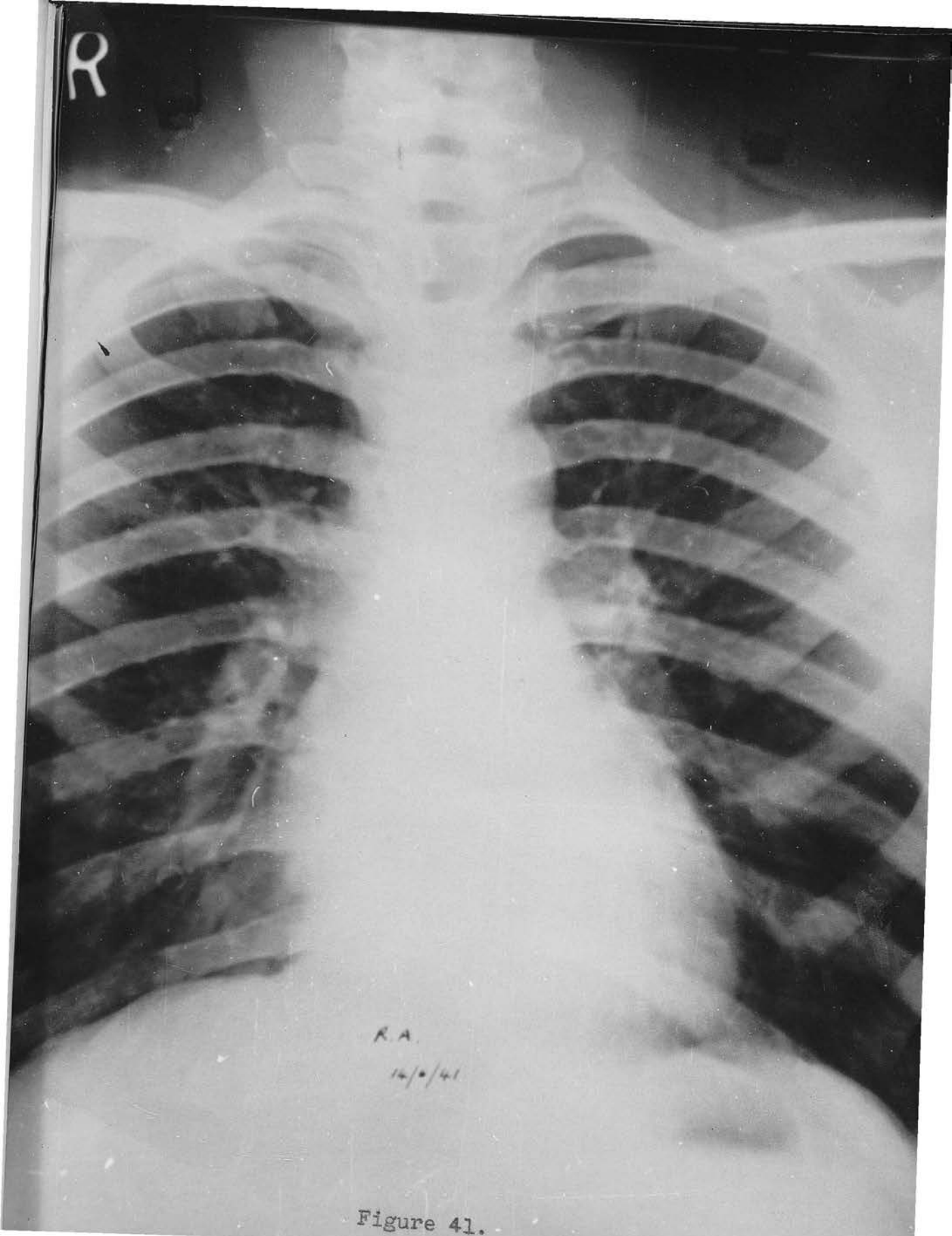


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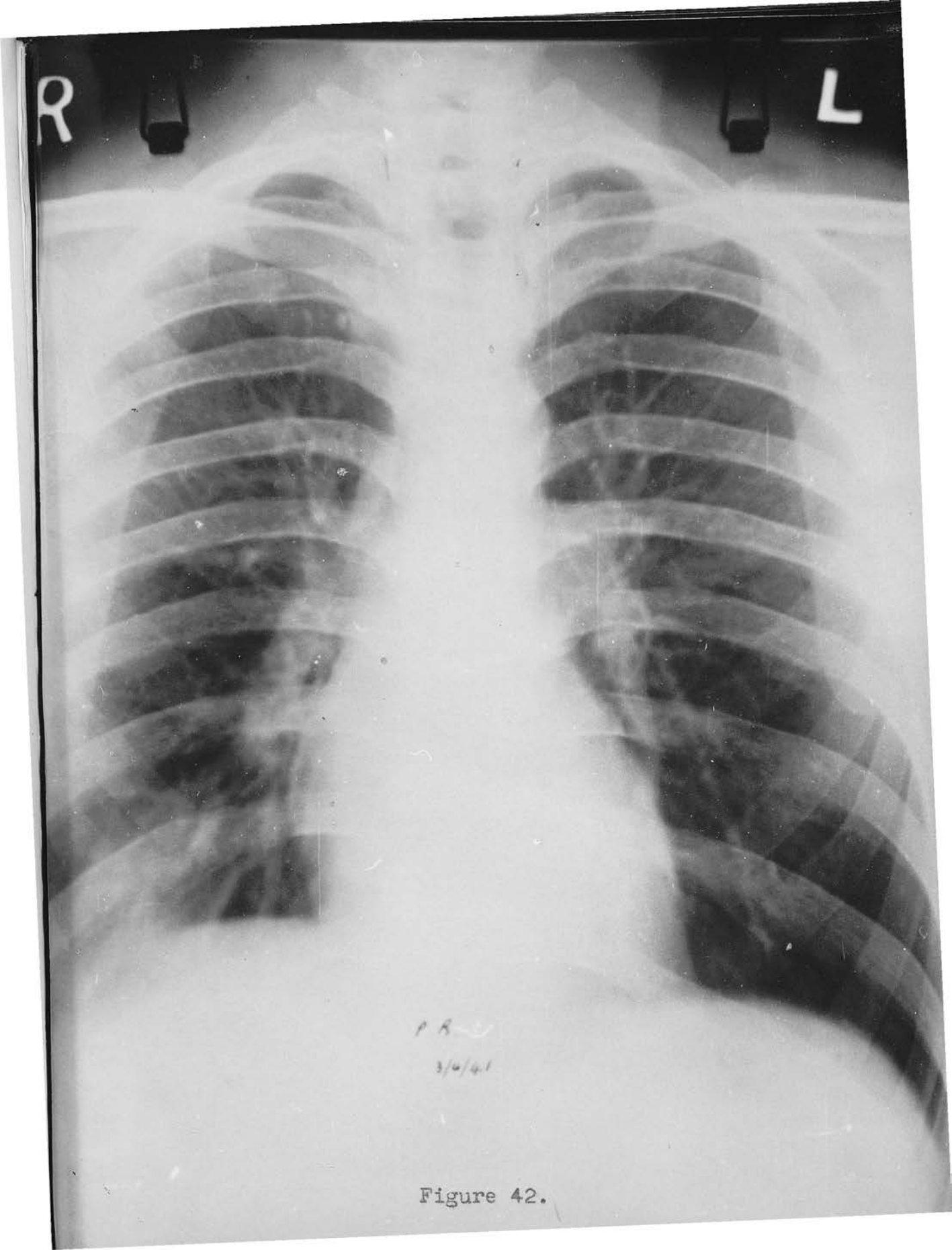


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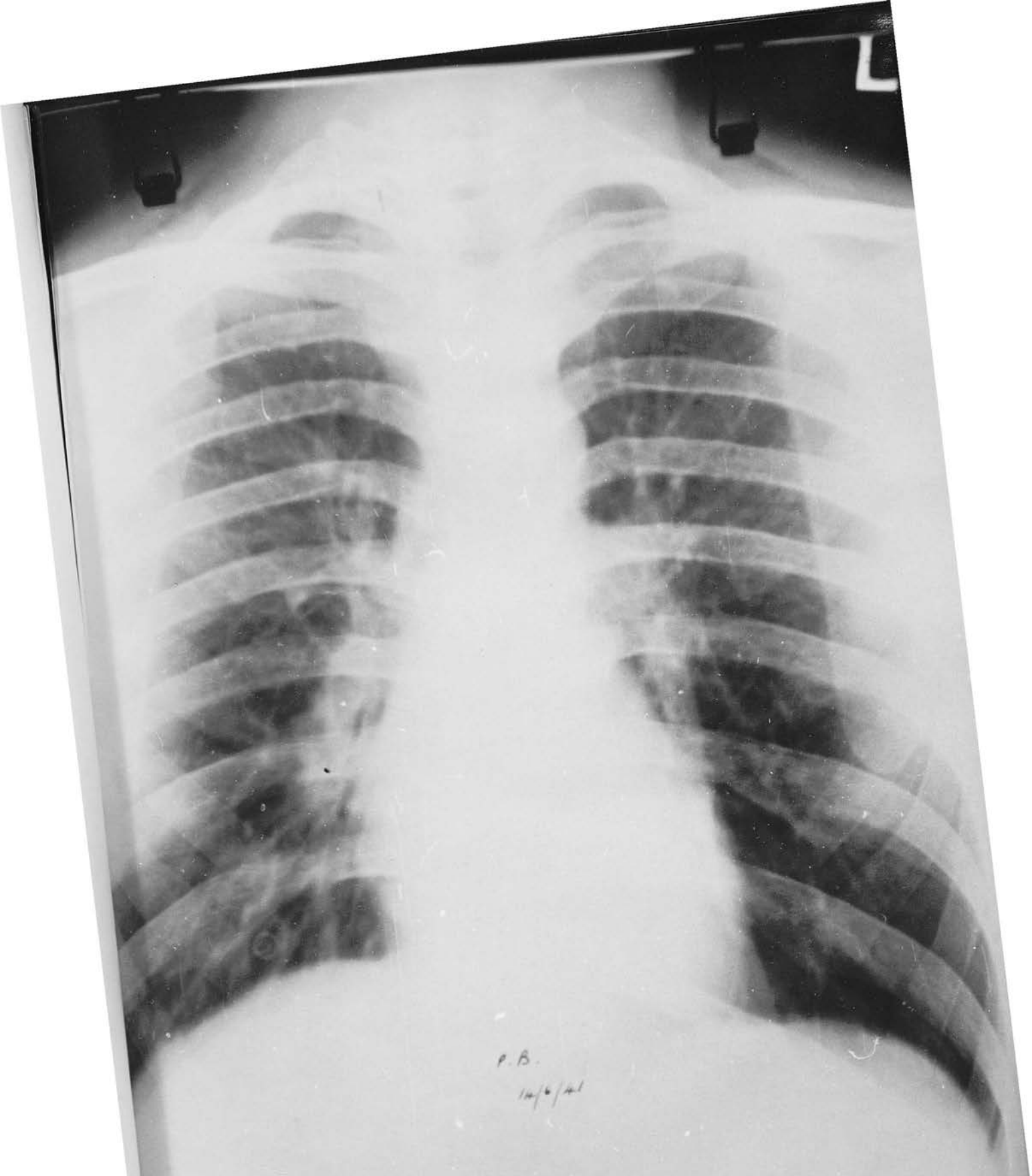


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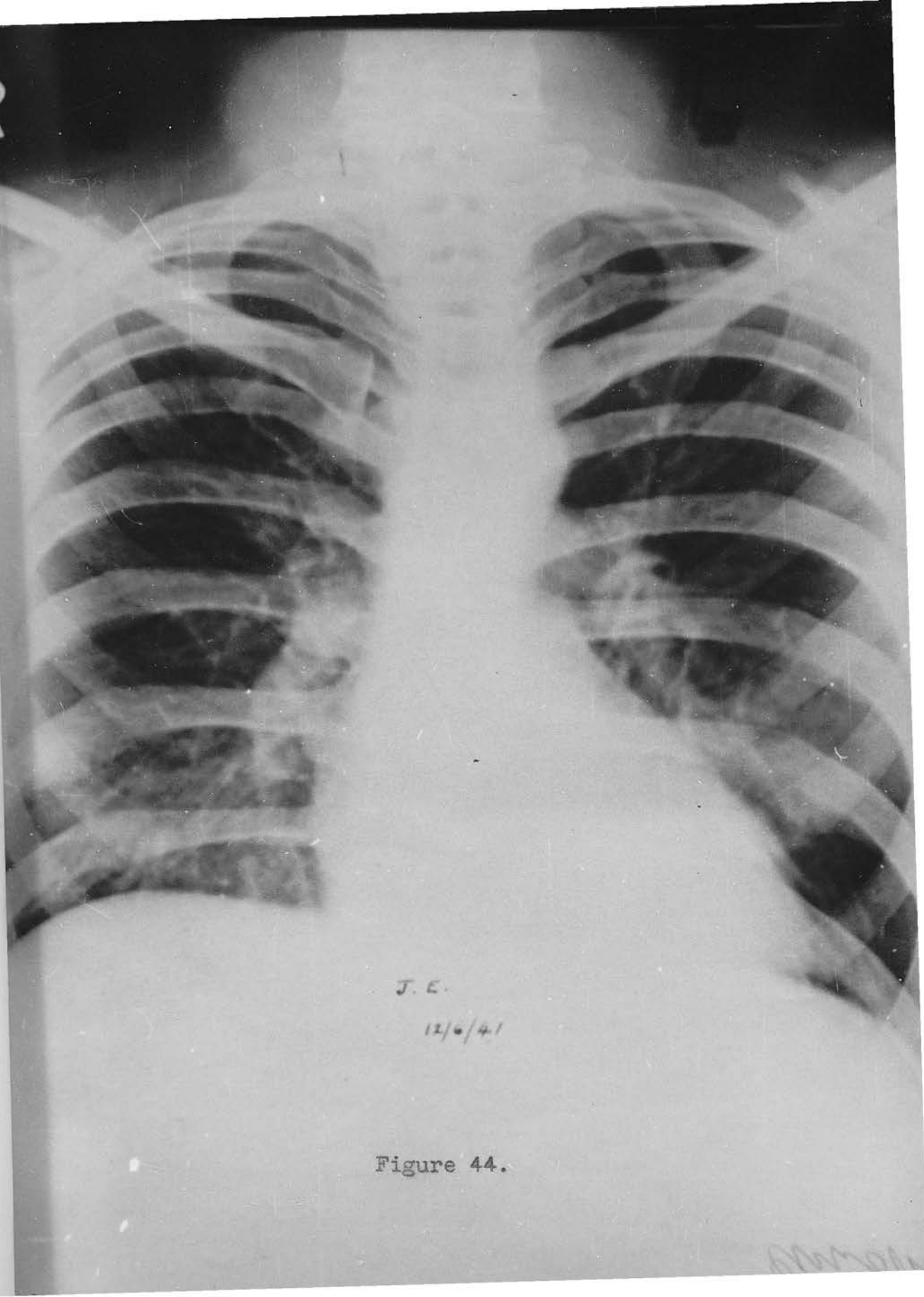


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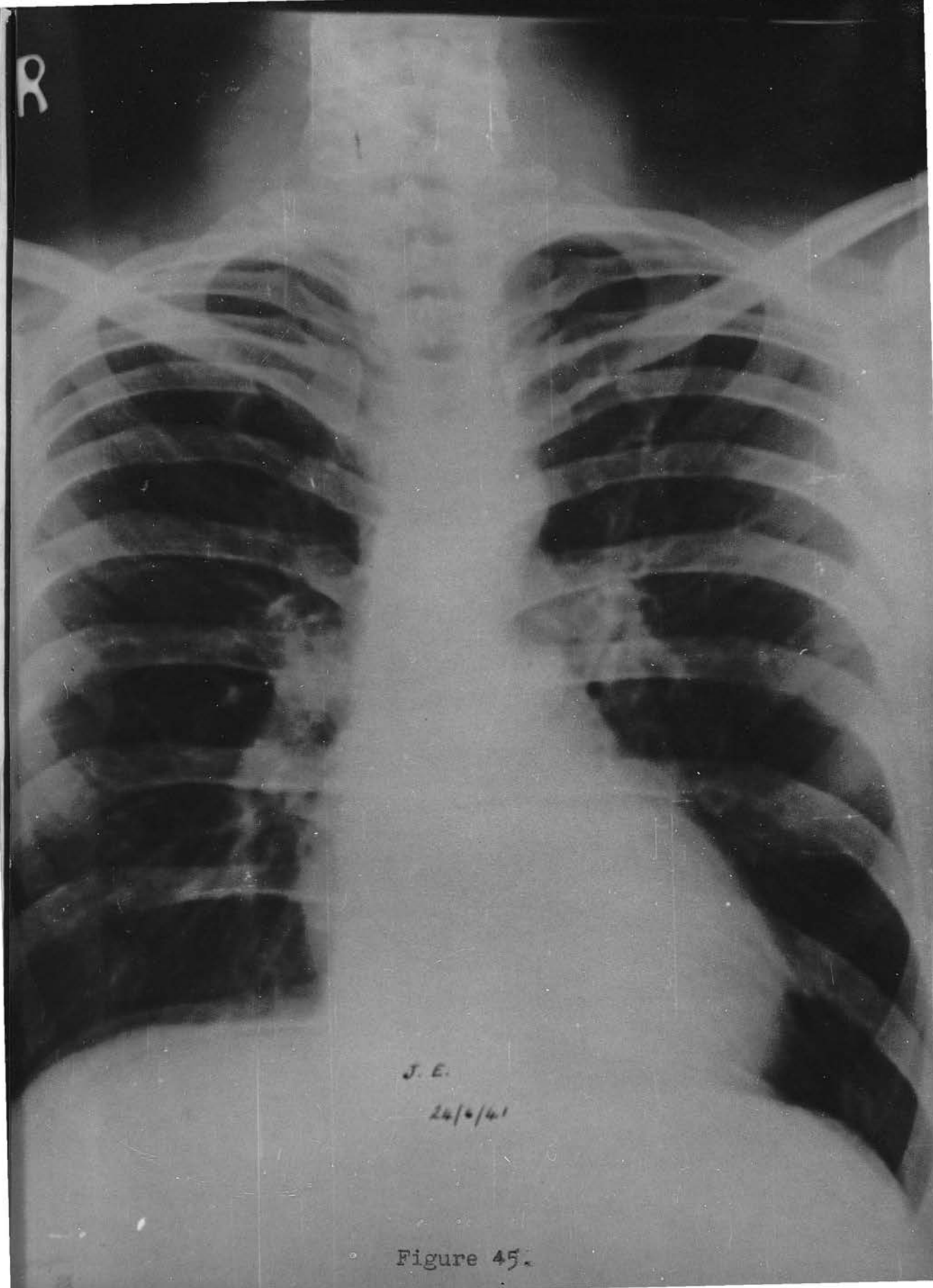


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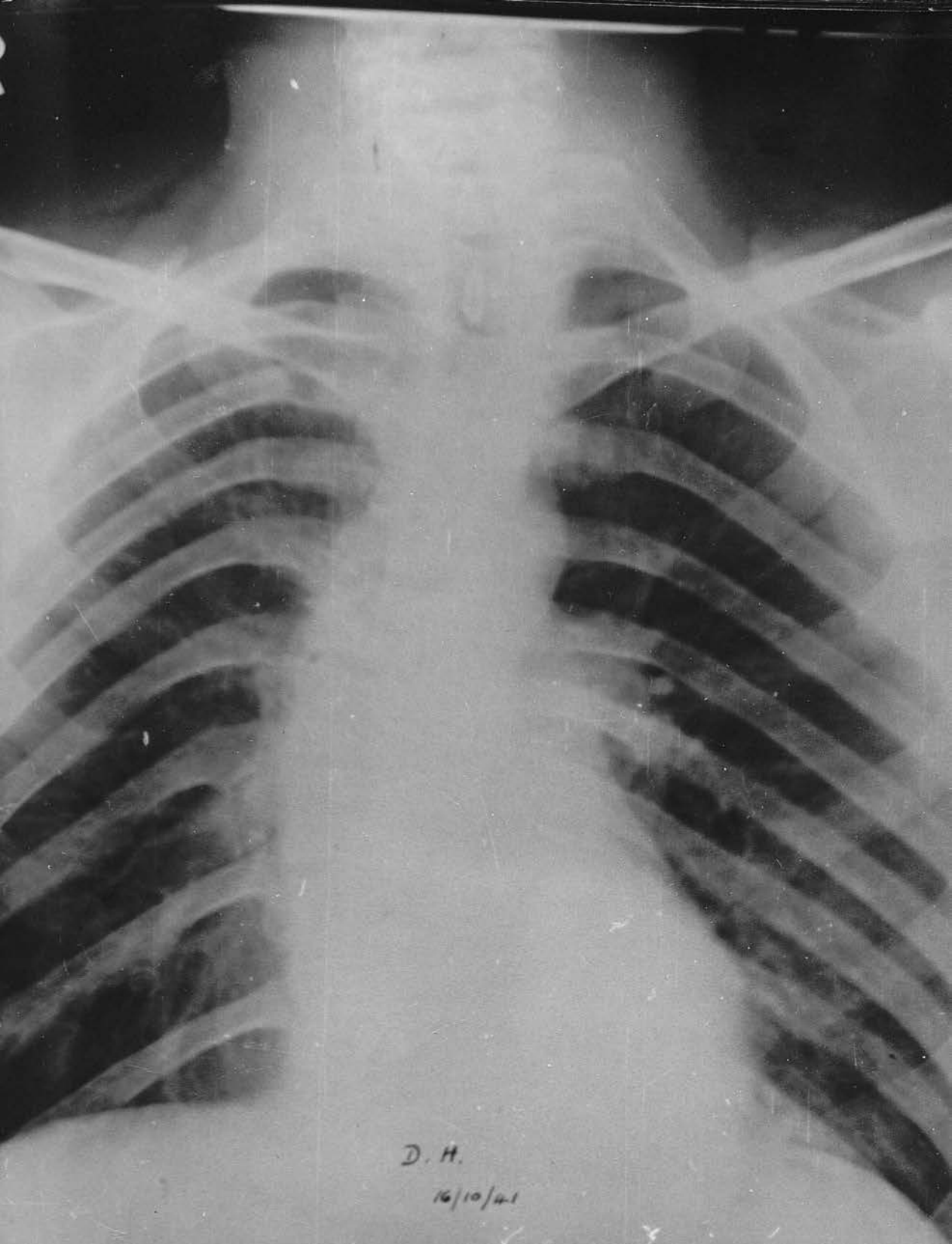


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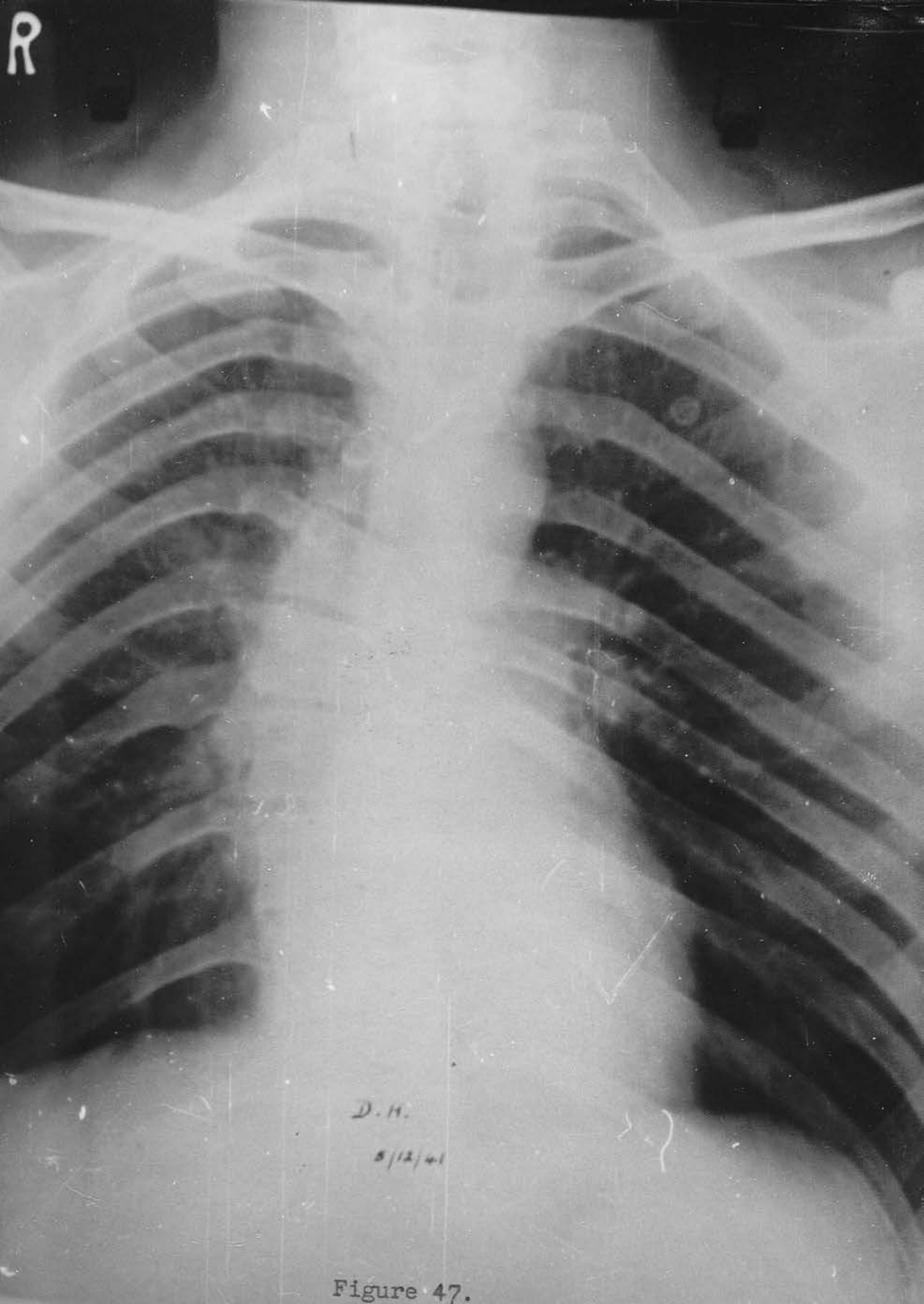


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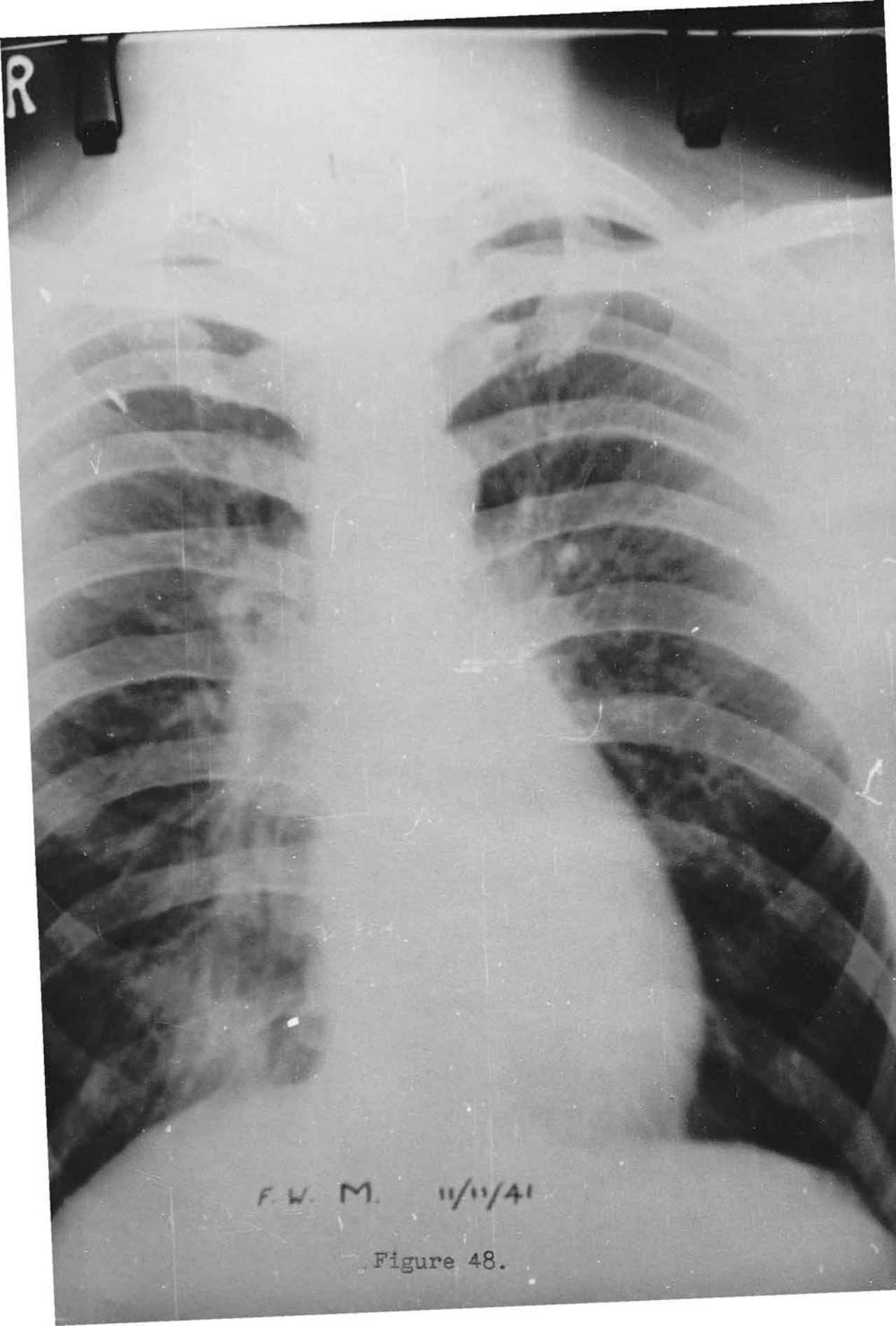


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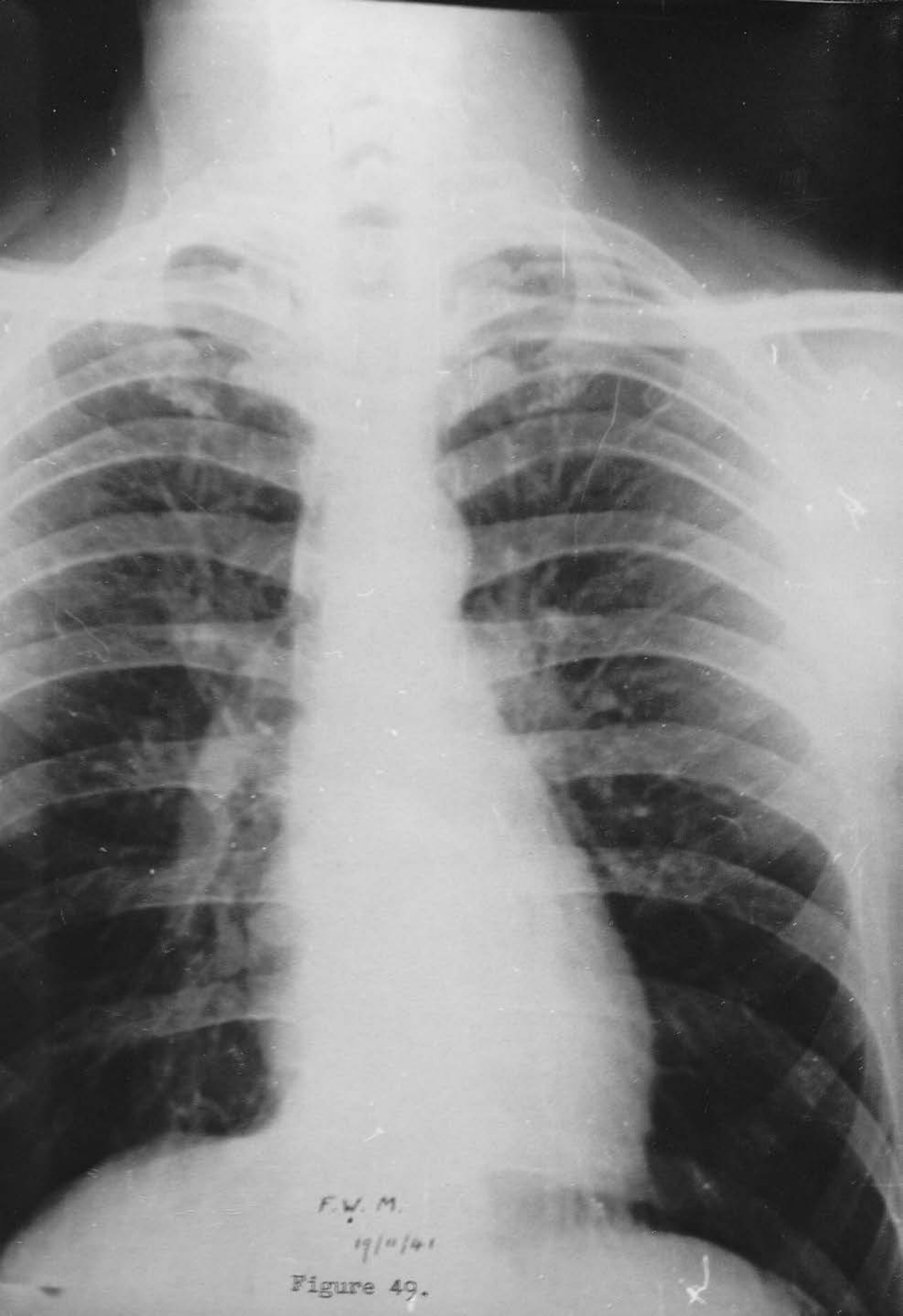


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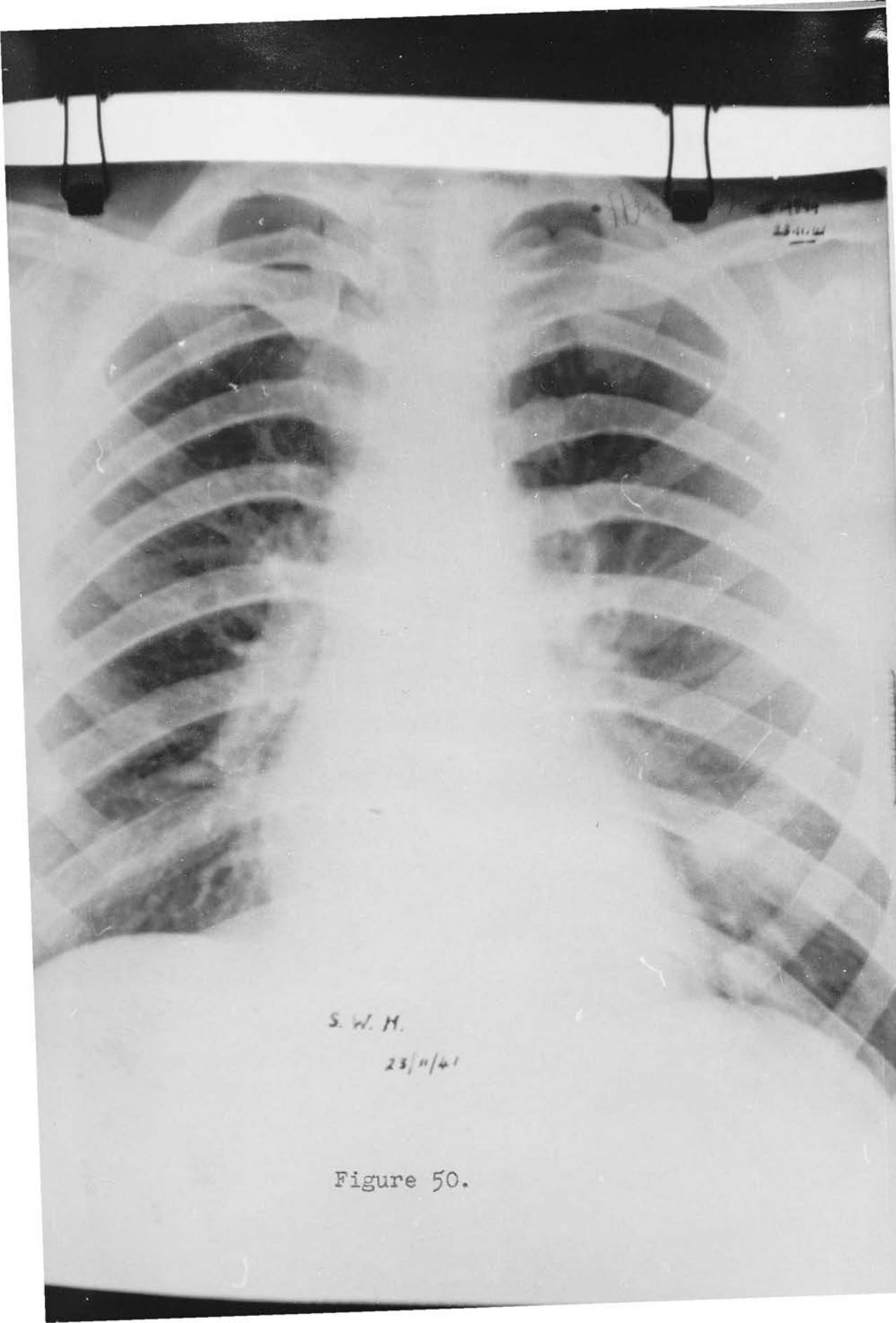


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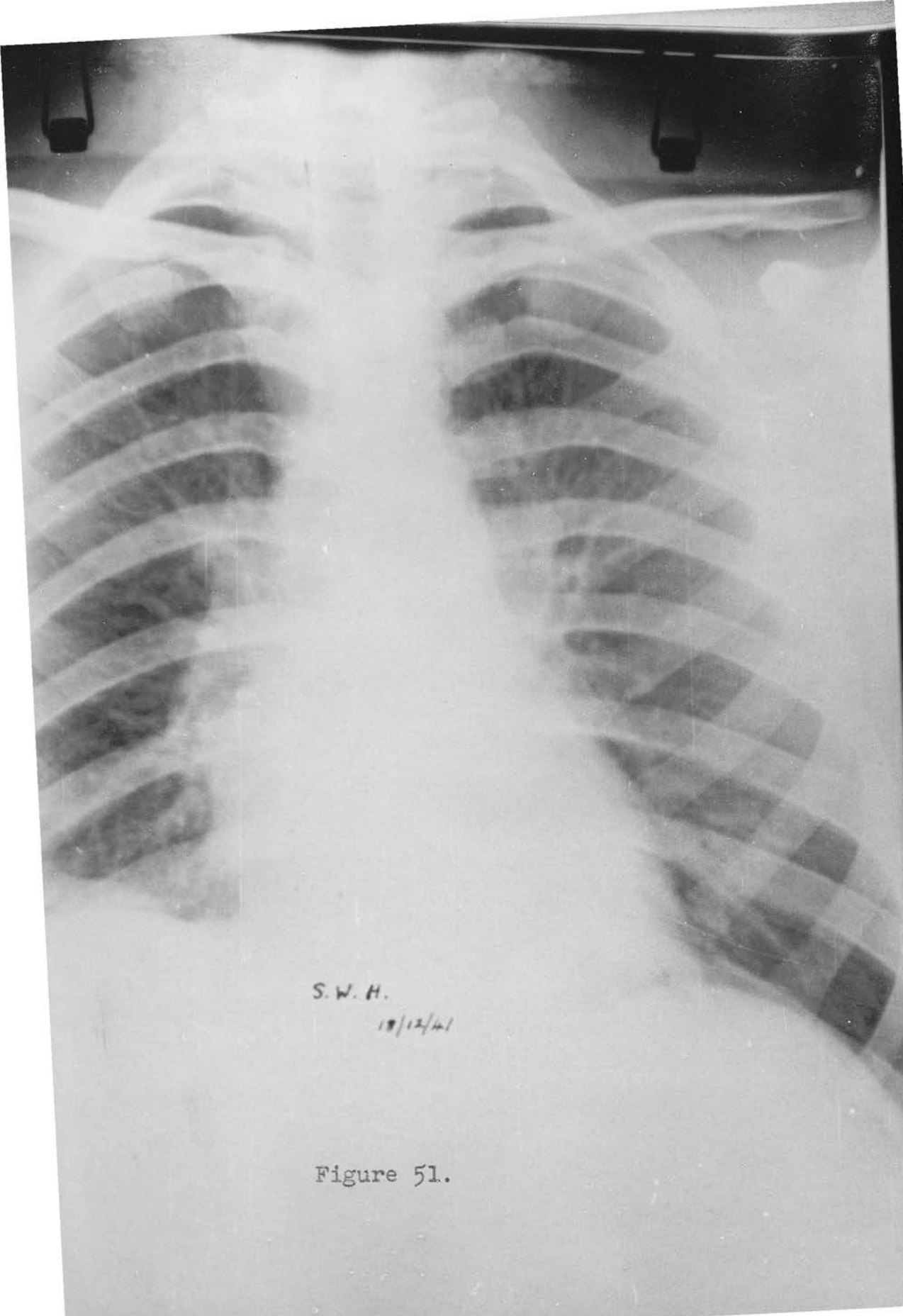


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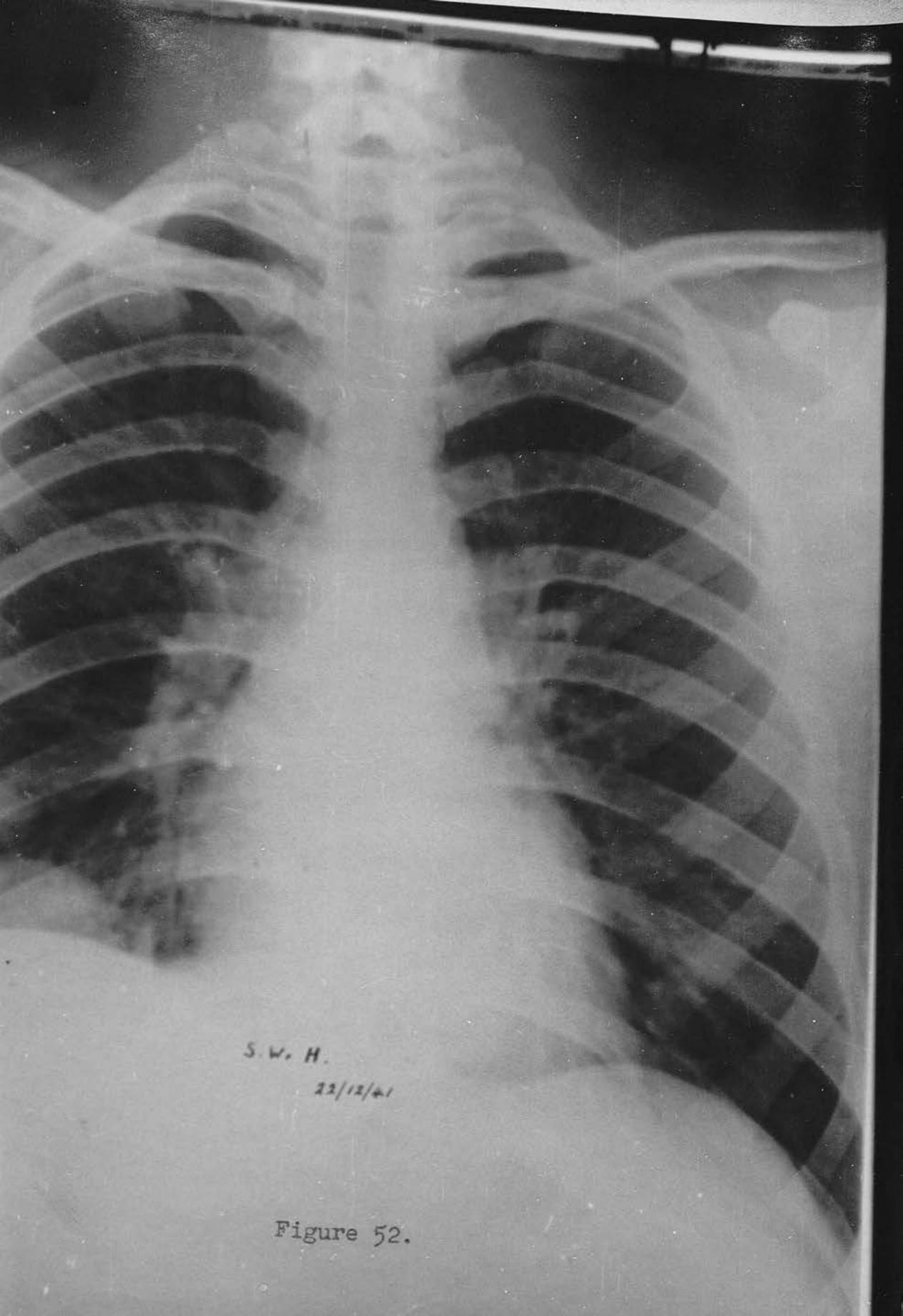


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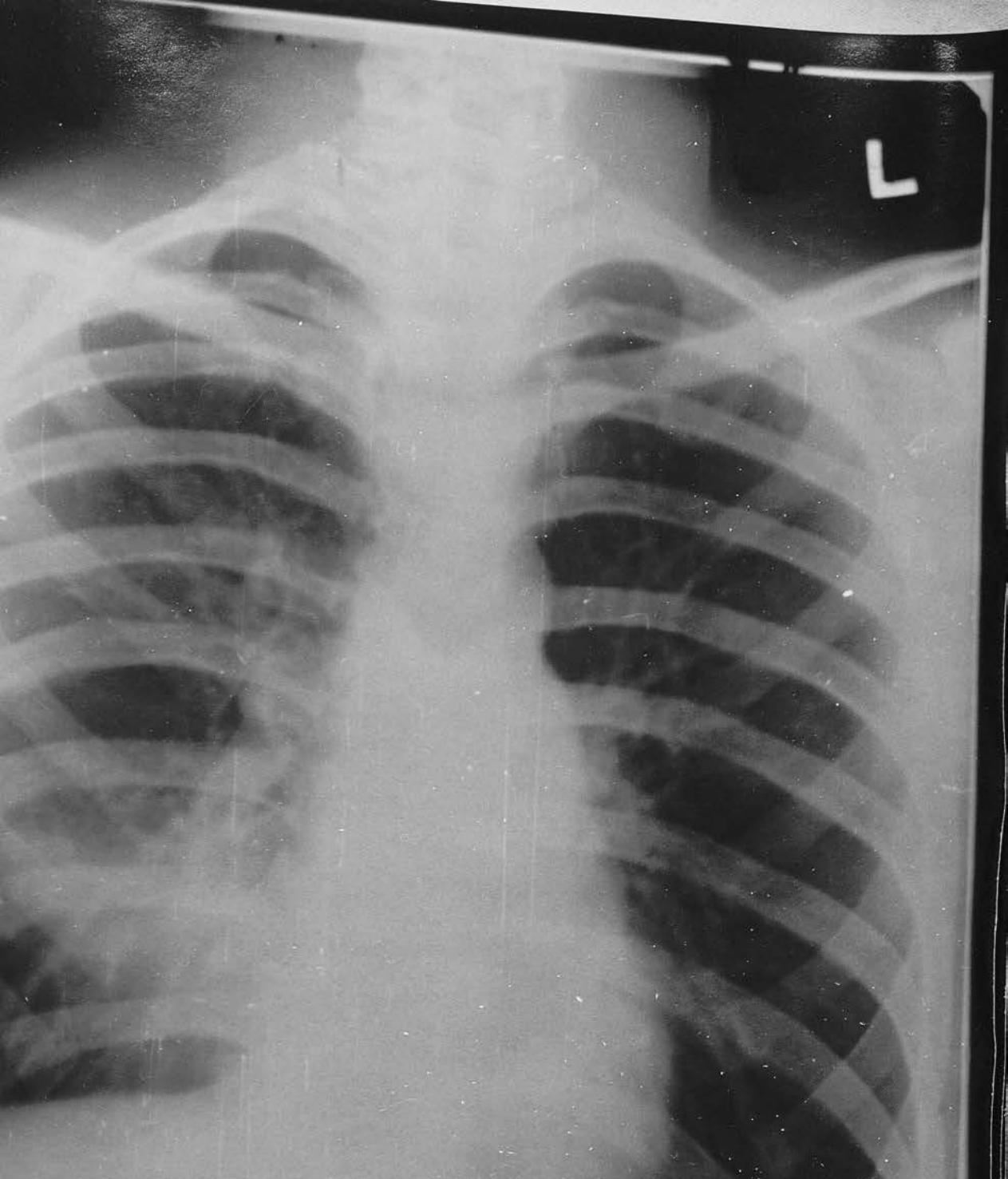


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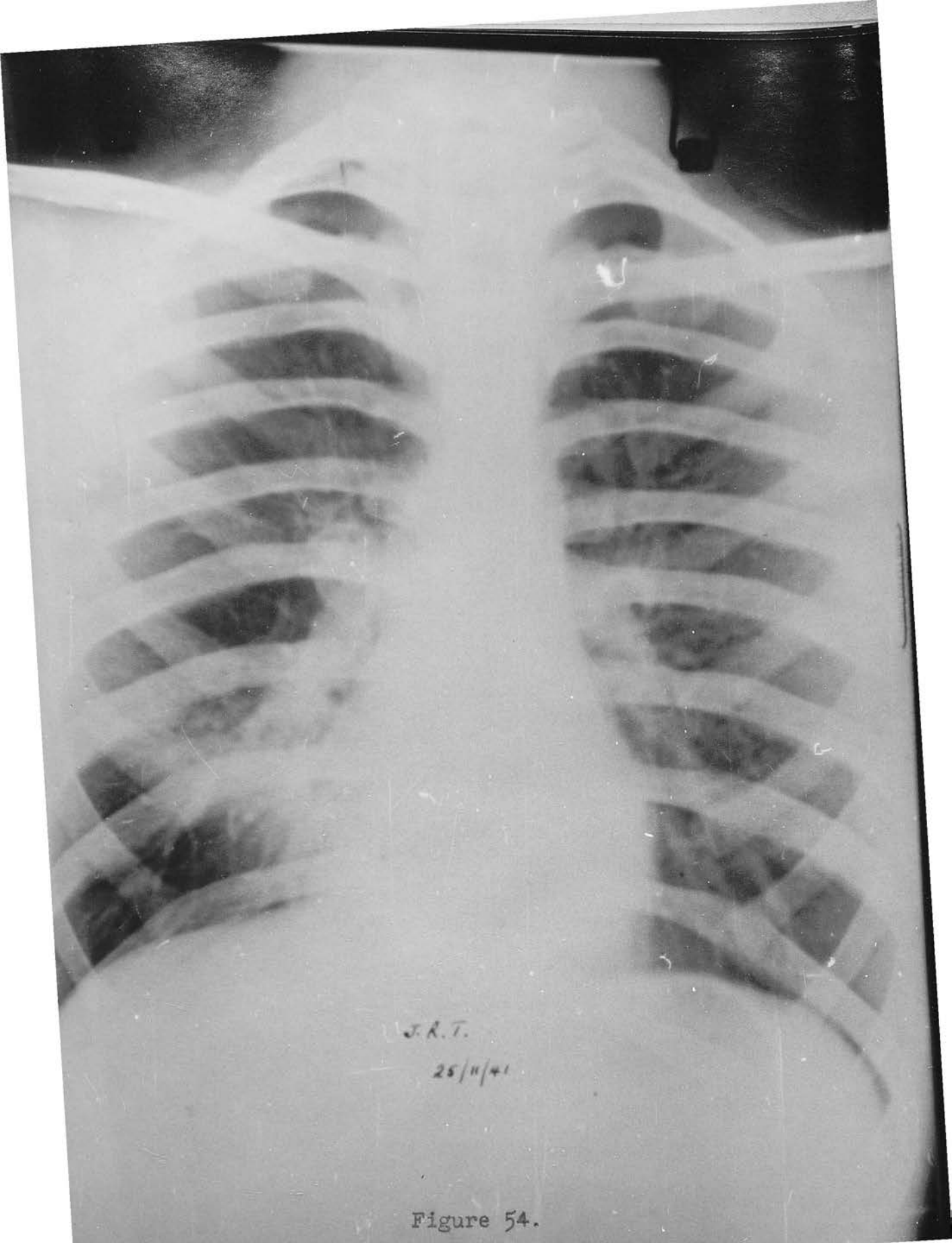


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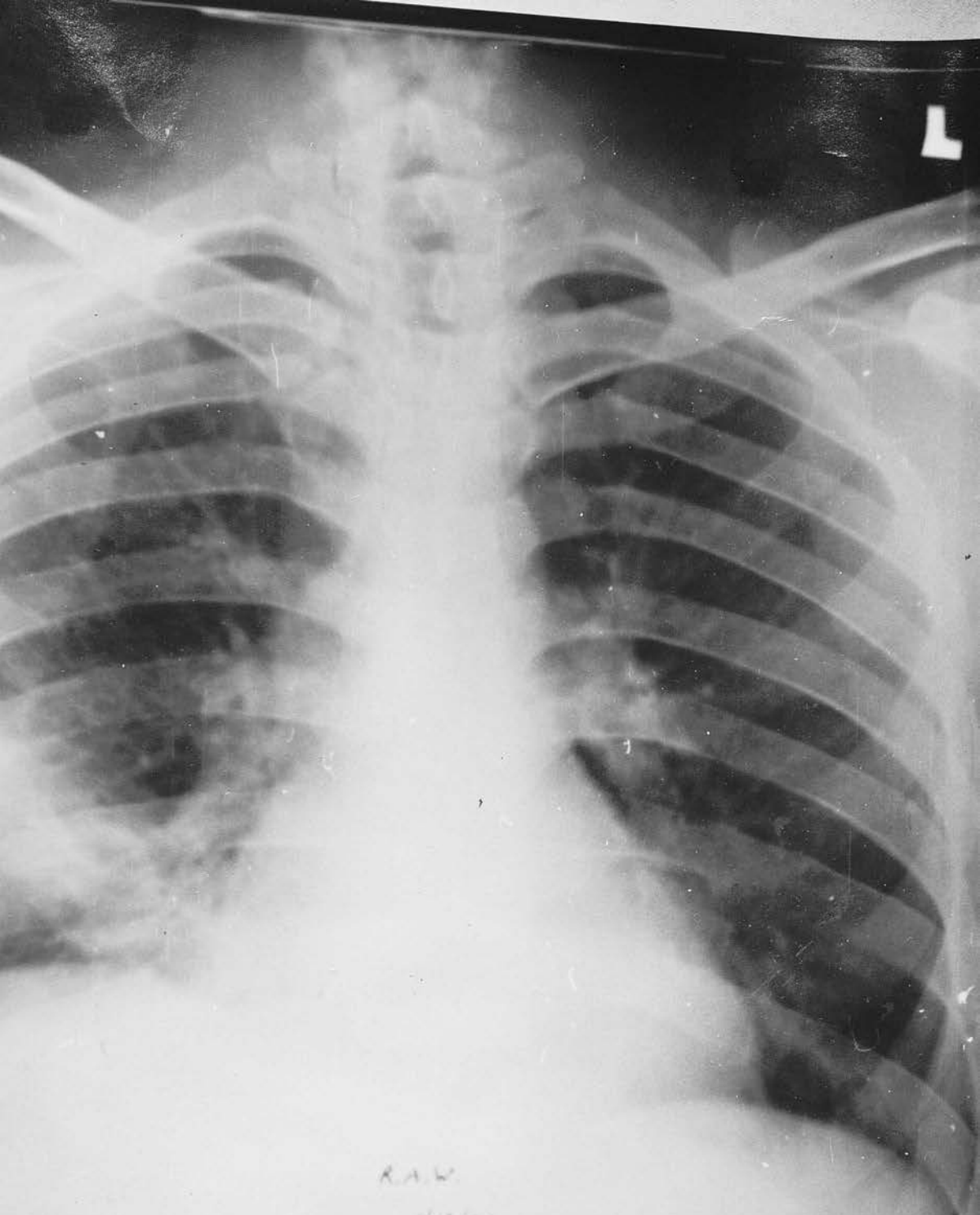


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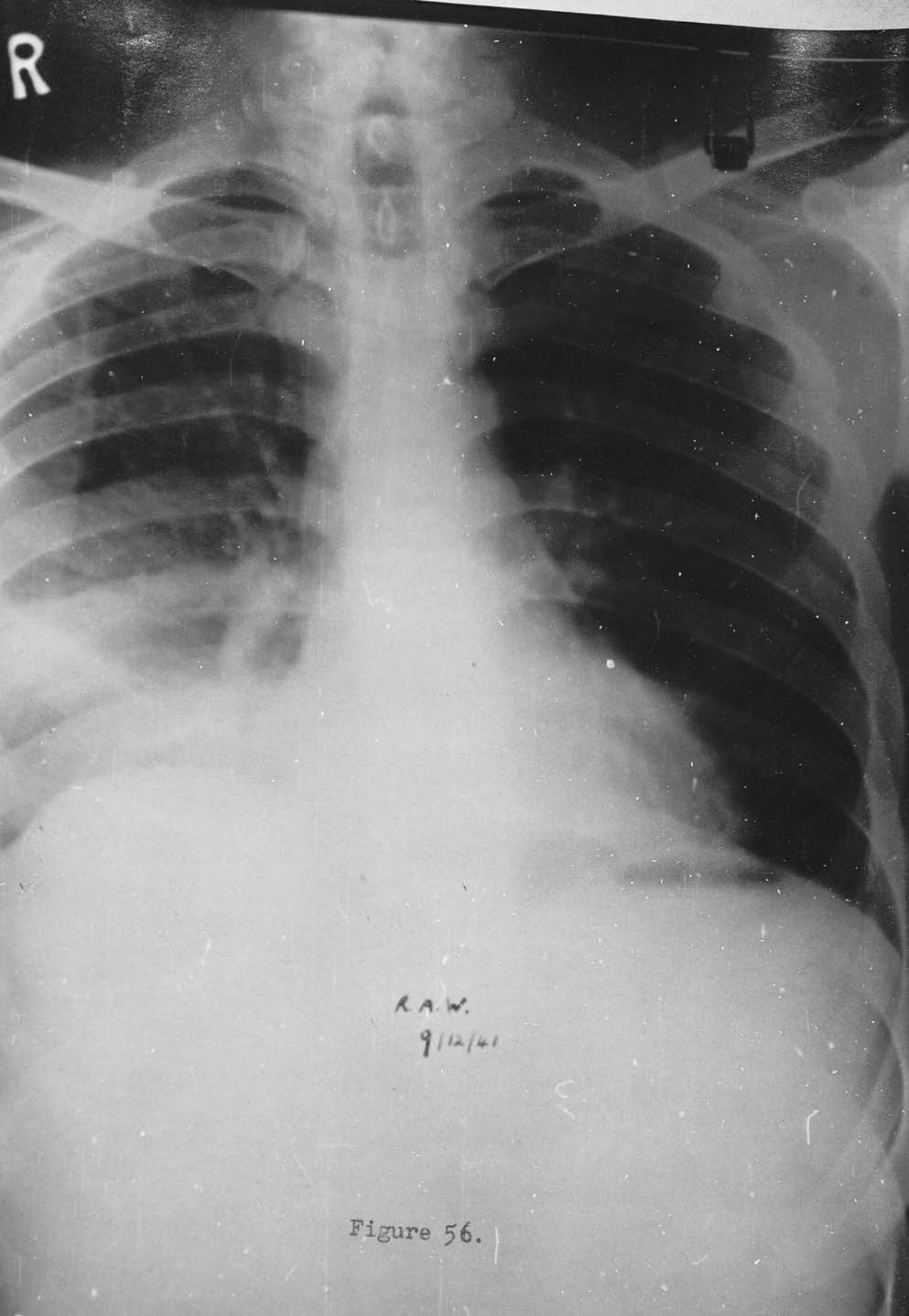


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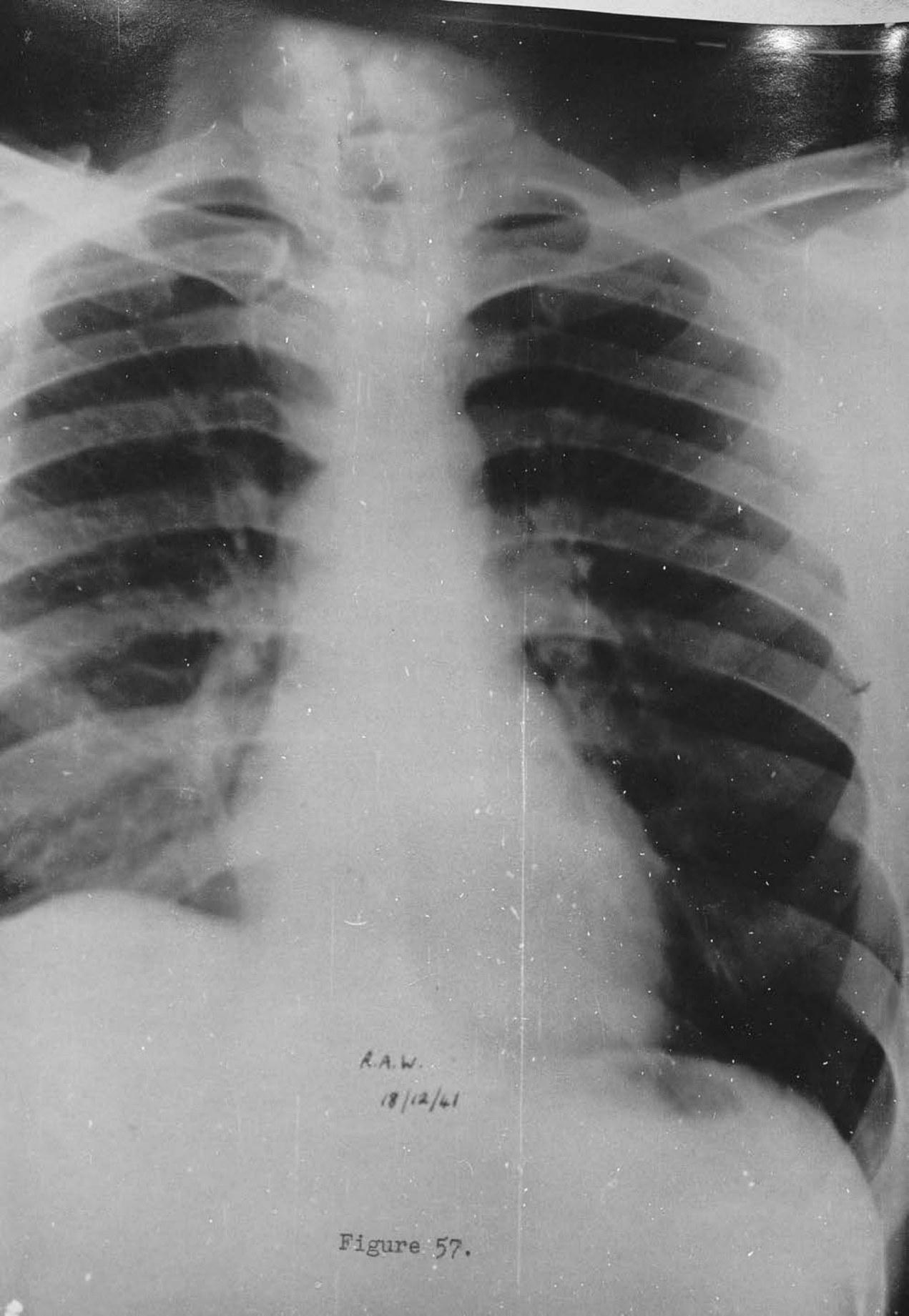


Figure 57.